Ref. No. 3519

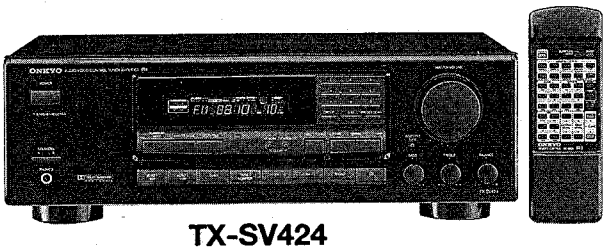
ONKYO® SERVICE MANUAL

QUARTZ SYNTHESIZED TUNER AMPLIFIER

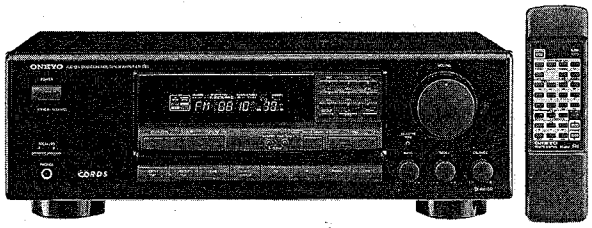
MODEL TX-SV424

MODEL TX-8410

MODEL TX-8410R



TX-SV424



TX-8410

Black model

BMD, BMDN	120V AC, 60Hz
BMP	230V AC, 50Hz
BMW	120V or 220V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®
AUDIO COMPONENTS

TABLE OF CONTENTS

Specifications....2
Service procedures....3
Exploded view (TX-SV424)....4
Parts list (TX-SV424)....5
Exploded view (TX-8410/8410R)....6
Parts list (TX-8410/8410R)....7
Block diagram (Tuner section)....8
TX-SV424....8
TX-8410/8410R....9
Block diagram (Tuner section)....10
TX-SV424....10
TX-8410/8410R....11
Microprocessor connection diagram....12
Microprocessor descriptions....13
IC block diagrams and descriptions....14
Adjustment procedures....20
Printed circuit board view....23
Printed circuit board-parts list....29
TX-SV424....29
TX-8410/8410R....33
Packing view....36

SERVICE PROCEDURES

1. Replacing the fuses

This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce darnier est indique la qu le present symbol est appose.

CIRCUIT NO.	PART NO.	DESCRIPTION
F901	252164Y	5A-UL/T-237,Primary 〈D/W〉
F902	252076	3.15A-TSC,Primary 〈P/W〉
F903	252075	2.5A-SE-EAK,Primary 〈P〉
F921,F922	252156Y	1A-UL/T-237,Secondar 〈D〉
	252070	1A-SE-EAK,Secondar 〈P/W〉

NOTE : 〈D〉: 120V model only
〈P〉: 230V model only

2. To Initialize the unit

This device employs a microprocessor to perform various functions and operations. If interference generated by an external power supply, radio wave, or other electrical source results in accident which causes the specified operations and functions to operate abnormally.
To perform a result, please follow the procedure below.

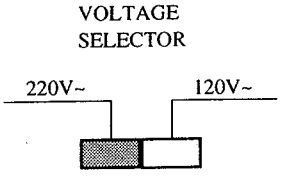
1. **Press and hold down the CD button, then press the POWER button.**
2. **Take the power supply cord from the socket while "TEST-" is displayed.**
3. **After "clear" is displayed, the preset memory and each mode stored in the memory, such as surround, are initialized and will return to the factory settings.**

3. Safety-check out

(Only U.S.A. model)
After correcting the original service problem, perform the following safety check before releasing the set to the customer.
Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.
Specifications: 3.3 Mohm±10% at 500V.

4. Change of voltage

Worldwide models are equipment with a voltage selector to conform with local power supplies. This switch is located on the back panel.
Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.
This switch is set to 220V at the factory. Voltage is changed by sliding the groove in the switch with the screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.



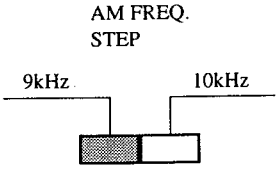
5. Memory preservation

This unit does not require memory preservation batteries.
A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged.
The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory, the power switch must be turned on and off a few times each month the keep the back-up system operative.
The period of the time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorted when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

6. Setting the tuning step frequency

Worldwide models are equipped with a step band selector switch. This switch is located on the back panel. This switch is set to 9 kHz at the factory, but may have to be reset to 10 kHz depending on the area where the unit is used.

	AM band step
Europe:	9 kHz
U.S.A.:	10 kHz



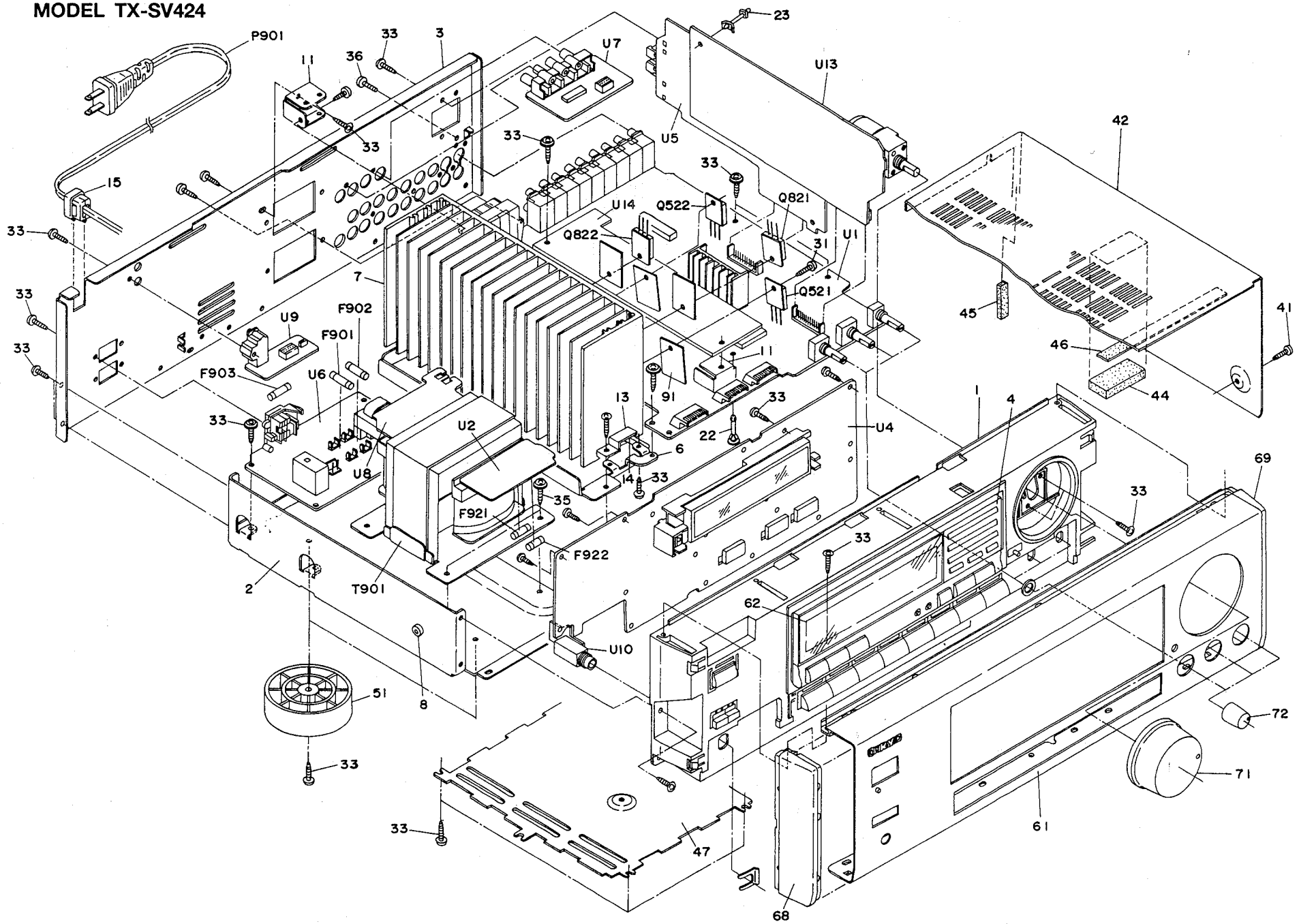
7. Changing the band step

With the exception of the worldwide models, a tuning step selector switch is not provided. When you change the band step, change the parts as shown below.

	To 10kHz	To 9kHz
R727	Remove	22kohm
R724	3kohm	Remove

EXPLODED VIEW

MODEL TX-SV424



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	27110860AY	Front bracket
2	27100278CY	Chassis
3	27122085Y	Rear panel <D>
	27122106AY	Rear panel <C>
	27122086AY	Rear panel <P>
	27122087Y	Rear panel <W>
	27122123Y	Rear panel <A>
	27122122Y	Rear panel <T>
4	27215258Y	Decorative frame
6	27130727Y	Bracket H
7	27160330AY	Radiator
8	27270212	Spacer <P/W>
11	27141623Y	Retainer H
12	27141530A	Retainer
13	27141654Y	Retainer
14	28141311Y	Cushion
15	27300750	⚠ Cord bushing
22	27190524	KGLS-14RF, Holder
23	27190062	KGLS-12S, Holder
31	801433	3SMS8W.SW+14B(BC), Sems screw
33	838130088	3TTB+8B, Self-tapping screw
35	830440089	4TTC+8C(BC), Self-tapping screw
36	838230088	3TTB+8B(Ni), Self-tapping screw
41	838430088	3TTB+8B(BC), Self-tapping screw
42	28184476BY	Top cover
44	28140265	8×40×20,Cushion
45	28141306Y	6×5×30,Cushion
46	28140680	0.5×10×180,Cushion
47	27170302AY	Bottom board
51	27175300Y	Leg
61	1A597121Y	Front panel ass'y
61a	8910301	CS-3, CS ring
61b	28198778	Facet
61c	28135199	Badge
62	28191714Y	Clear plate
68	28125255-6Y	End cap L
69	28125256-6Y	End cap R
71	28325057	Volume knob ass'y
72	28325055Y	Tone knob
91	223021	Isolation sheet
92	260208	Wire tie

REF. NO.	PART NO.	DESCRIPTION
F901	252164Y	⚠ 5A-UL/T-237, Primary fuse <D/W>
F902	252076	⚠ 3.15A-SE-EAK, Primary fuse <P/W>
F903	252075	⚠ 2.5A-SE-EAK, Primary fuse <P>
F921,F922	252156Y	⚠ 1A-UL/T-237, Secondary fuse <D>
	252070	⚠ 1A-SE-EAK, Secondary fuse <P/W>
P901	253192HIT	⚠ AS-UC-6#18, Power supply cord <D>
	253193HIT	⚠ AS-CEE, Power supply cord <P>
	253092-1A	⚠ AS-CEE-2, Power supply cord <W>
	253197HIT	⚠ AS-SAA, Power supply cord <A>
	253198HIT	⚠ AS-BS, Power supply cord <B>
P904,P905	25050904	⚠ NSCT-2P697,AC outlet <A>
Q521,Q522	2203063,	* 2SC5198-O,
	2202523 or	* 2SC4468-O or
	2202293	* 2SC3182N-O, Power amplifier transistor
Q523,Q524	2203053,	* 2SA1941-O,
	2202513 or	* 2SA1695-O or
	2202283	* 2SA1265N-O, Power amplifier transistor
Q821,Q822	2203043,	* 2SC5197-O,
	2202253 or	* 2SC4467-O or
	2202503	* 2SC3181N-O, Power amplifier transistor
Q823,Q824	2203033,	* 2SA1940-O,
	2202243 or	* 2SA1694-O or
	2202493	* 2SA1264N-O, Power amplifier transistor
T901	2301097Y	⚠ NPT-1237D, Power transformer <D>
	2301130Y	⚠ NPT-1249D, Power transformer <C>
	2301098Y	⚠ NPT-1237P, Power transformer <P>
	2301099Y	⚠ NPT-1237DG, Power transformer <W>
U1	1A597596-1Y	NAAR-5396-1, Main circuit pc board ass'y <D>
	1A597596-1AY	NAAR-5396-1A, Main circuit pc board ass'y <P/W>
U2	1A597597-1Y	NAETC-5397-1, Power supply circuit pc board ass'y <D>
	1A597597-1AY	NAETC-5397-1A, Power supply circuit pc board ass'y <P/W>
U4	1A597599-1Y	NADIS-5399-1,Display circuit pc board ass'y <D>
	1A597599-1AY	NADIS-5399-1A,Display circuit pc board ass'y <C>
	1A597599-1BY	NADIS-5399-1B,Display circuit pc board ass'y <P>
	1A597599-1CY	NADIS-5399-1C,Display circuit pc board ass'y <W>

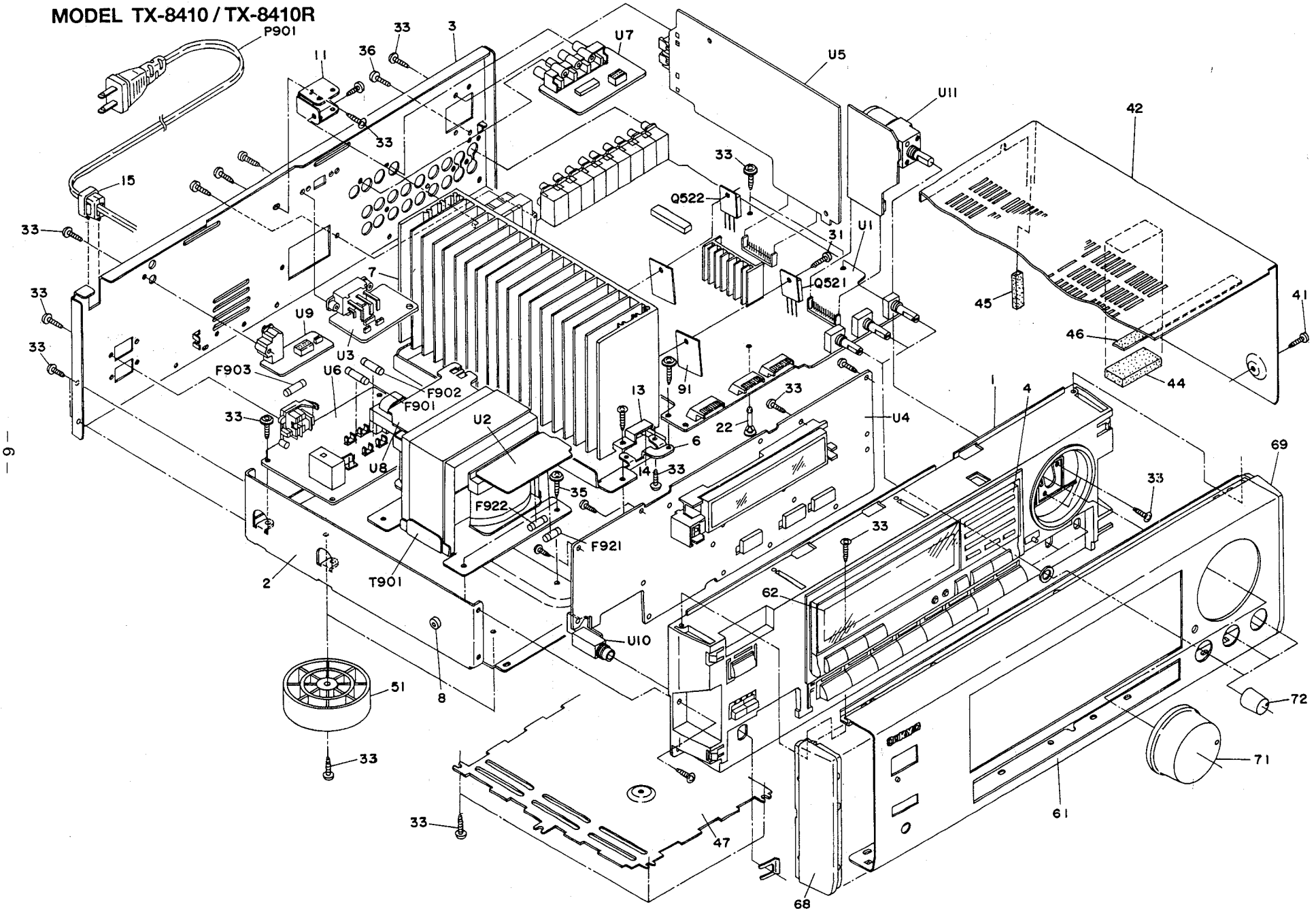
REF. NO.	PART NO.	DESCRIPTION
U5	1A597500-1Y	NARF-5400-1, Tuner circuit pc board ass'y <D>
	1A597500-1AY	NARF-5400-1A, Tuner circuit pc board ass'y <P>
	1A597500-1BY	NARF-5400-1B, Tuner circuit pc board ass'y <W>
U6	1A597501-1Y	NAPS-5401-1, Power supply circuit pc board ass'y <D>
U6	1A597501-1AY	NAPS-5401-1A, Power supply circuit pc board ass'y <P>
U6	1A597501-1BY	NAPS-5401-1B, Power supply circuit pc board ass'y <W>
U7	1A597502-1Y	NAETC-5402-1, Video circuit pc board ass'y
U8	1A597503-1Y	NAETC-5403-1, Primary circuit pc board ass'y
U9	1A597504-1Y	NAETC-5404-1,RI terminal pc board ass'y <D/P>
	1A597504-1AY	NAETC-5404-1A,RI terminal pc board ass'y <W>
U10	1A597505-1Y	NAETC-5405-1, Headphone terminal pc board ass'y <D/W>
	1A597505-1AY	NAETC-5405-1A, Headphone terminal pc board ass'y <P>
U13	1A597509-1Y	NAAF-5409-1, Surround circuit pc board ass'y
U14	1A597510-1Y	NAAF-5410-1, Center and rear amplifier circuit pc board ass'y <D>
	1A597510-1AY	NAAF-5410-1A, Center and rear amplifier circuit pc board ass'y <P/W>

NOTE: <D>:120V model only
<P>:230V model only
<W>:Worldwide model only
<A>:Australian model only
<C>:Canadian model only
<T>:Taiwanese model only
<B>:UK model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

EXPLODED VIEW

MODEL TX-8410 / TX-8410R



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	27110861AY	Front bracket <D/W/T>
	27110862AY	Front bracket <P>
2	27100278CY	Chassis
3	27122088AY	Rear panel <D>
	27122090AY	Rear panel <P>
	27122089Y	Rear panel <W>
	27122132Y	Rear panel <T>
4	27215262Y	Decorative frame <D/W/T>
	27215259Y	Decorative frame <P>
6	27130727Y	Bracket H
7	27160330CY	Radiator
8	27270212	Spacer <P/W>
11	27141623Y	Retainer H
13	27141654Y	Retainer
14	28141311Y	Cushion
15	27300750	⚠ Cord bushing
22	27190524	KGLS-14RF, Holder
31	801433	3SMS8W.SW+14B(BC), Sems screw
33	838130088	3TTB+8B, Self-tapping screw
35	830440089	4TTC+8C(BC), Self-tapping screw
36	838230088	3TTB+8B(Ni), Self-tapping screw
41	838430088	3TTB+8B(BC), Self-tapping screw
42	28184476BY	Top cover
44	28140265	8×40×20,Cushion
46	28140680	0.5×10×180,Cushion
47	27170302AY	Bottom board
51	27175300Y	Leg
61	1A598121Y	Front panel ass'y <D/W/T>
	1A599121Y	Front panel ass'y <P>
61a	8910301	CS-3, CS ring
61b	28198778Y	Facet
61c	28135199Y	Badge
62	28191714Y	Clear plate
68	28125255-6Y	End cap L
69	28125256-6Y	End cap R
71	28325154	Volume knob ass'y
72	28325055Y	Tone knob
91	223023	Isolation sheet
92	260208	Wire tie

REF. NO.	PART NO.	DESCRIPTION
F901	252164Y	⚠ 5A-UL/T-237, Primary fuse <D/W>
F902	252076	⚠ 3.15A-SE-EAK, Primary fuse <P/W>
F903	252075	⚠ 2.5A-SE-EAK, Primary fuse <P>
F921,F922	252156Y	⚠ 1A-UL/T-237, Secondary fuse <D>
	252070	⚠ 1A-SE-EAK, Secondary fuse <P/W>
P901	253192HIT	⚠ AS-UC-6#18, Power supply cord <D>
	253193HIT	⚠ AS-CEE, Power supply cord <P>
	253092-1A	⚠ AS-CEE-2, Power supply cord <W>
Q521,Q522	2202823 or	* 2SC5200-O or
	2201483	* 2SC3281-O, Power amplifier transistor
Q523,Q524	2202813 or	* 2SA1943-O or
	2201473	* 2SA1302-O, Power amplifier transistor
T901	2301112Y	⚠ NPT-1243D, Power transformer <D>
	2301113Y	⚠ NPT-1243P, Power transformer <P>
	2301114Y	⚠ NPT-1243DG, Power transformer <W>
U1	1A598596-3Y	NAAR-5396-3, Main circuit pc board ass'y <D>
	1A598596-3AY	NAAR-5396-3A, Main circuit pc board ass'y <P/W>
U2	1A598597-3Y	NAETC-5397-3, Power supply circuit pc board ass'y <D>
	1A598597-3AY	NAETC-5397-3A, Power supply circuit pc board ass'y <P/W>
U3	1A598598-3Y	NASW-5398-3,Switch pc board ass'y <D>
U4	1A598599-3Y	NADIS-5399-3,Display circuit pc board ass'y <D>
	1A598599-3AY	NADIS-5399-3A,Display circuit pc board ass'y <C>
	1A598599-3BY	NADIS-5399-3B,Display circuit pc board ass'y <P>
	1A598599-3CY	NADIS-5399-3C,Display circuit pc board ass'y <W>

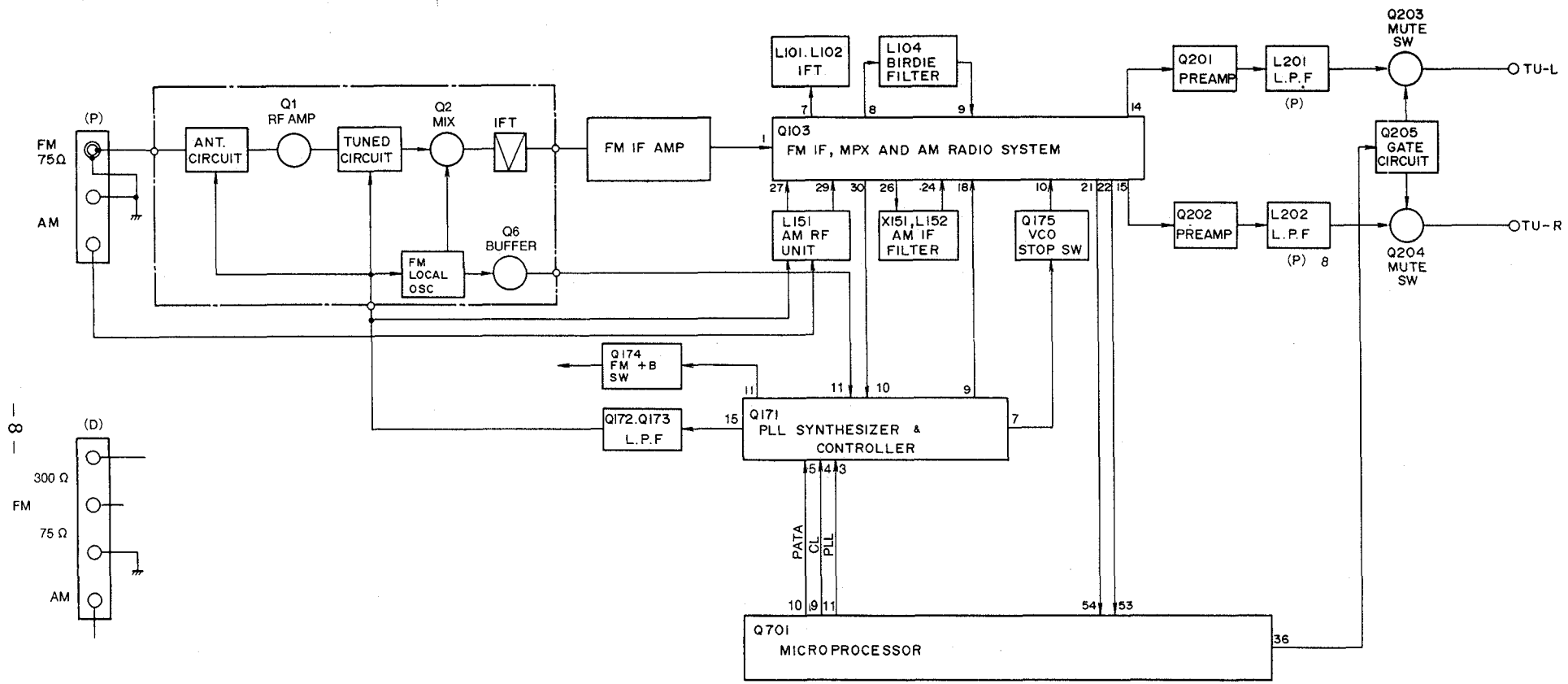
REF. NO.	PART NO.	DESCRIPTION
U5	1A598500-3Y	NARF-5400-3, Tuner circuit pc board ass'y <D>
	1A598500-3AY	NARF-5400-3A, Tuner circuit pc board ass'y <P>
	1A598500-3BY	NARF-5400-3B, Tuner circuit pc board ass'y <W>
U6	1A598501-3Y	NAPS-5401-3, Power supply circuit pc board ass'y <D>
	1A598501-3AY	NAPS-5401-3A, Power supply circuit pc board ass'y <P>
	1A598501-3BY	NAPS-5401-3B, Power supply circuit pc board ass'y <W>
U7	1A598502-3Y	NAETC-5402-3, Video circuit pc board ass'y
U8	1A598503-3Y	NAETC-5403-3, Primary circuit pc board ass'y
U9	1A598504-3Y	NAETC-5404-3,RI terminal pc board ass'y <D/P>
	1A598504-3AY	NAETC-5404-3A,RI terminal pc board ass'y <W>
U10	1A598505-3Y	NAETC-5405-3, Headphone terminal pc board ass'y <D/W>
	1A598505-3AY	NAETC-5405-3A, Headphone terminal pc board ass'y <P>
U11	1A598507-3Y	NAETC-5407-3, Volume circuit pc board ass'y

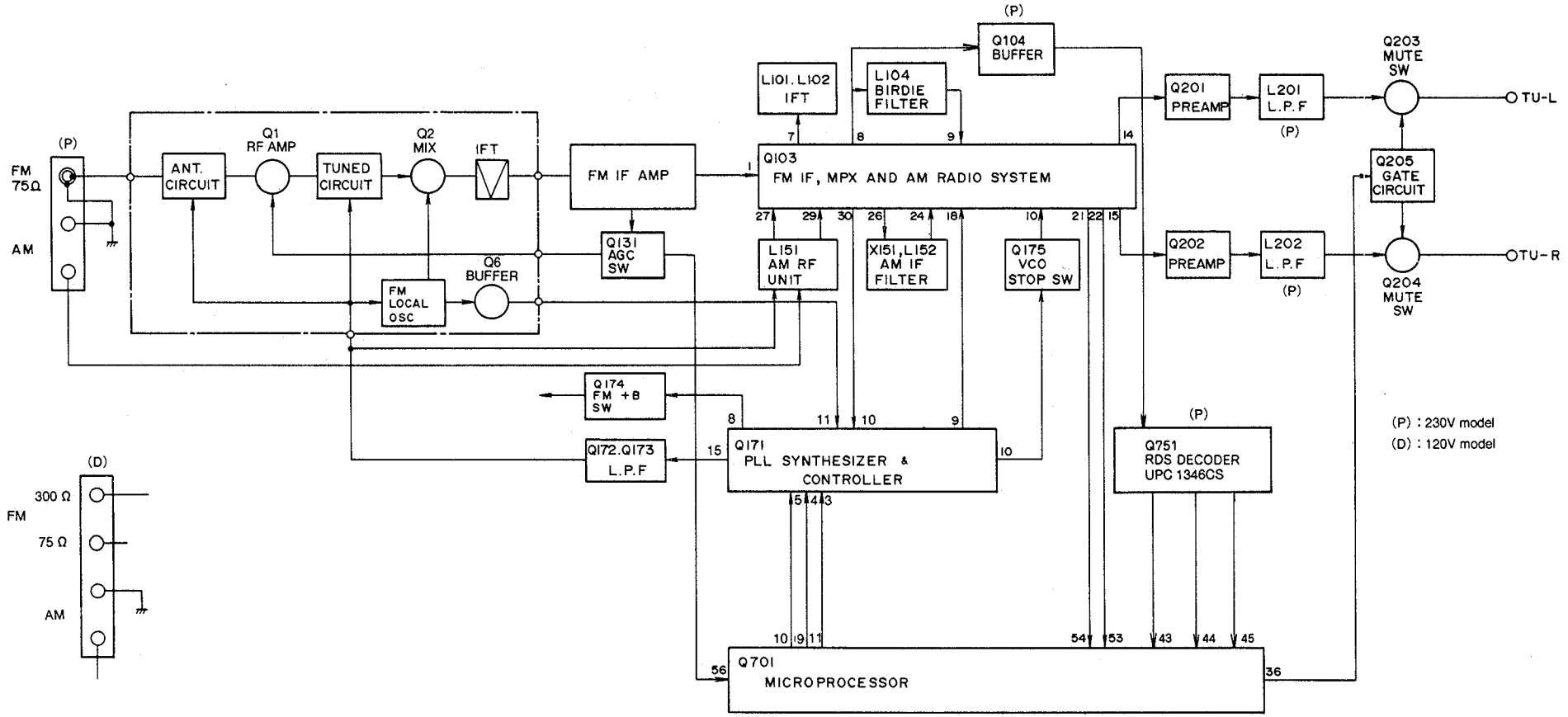
NOTE: <D>:120V model only
<P>:230V model only
<W>:Worldwide model only
<C>:Canadian model only
<T>:Taiwanese model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

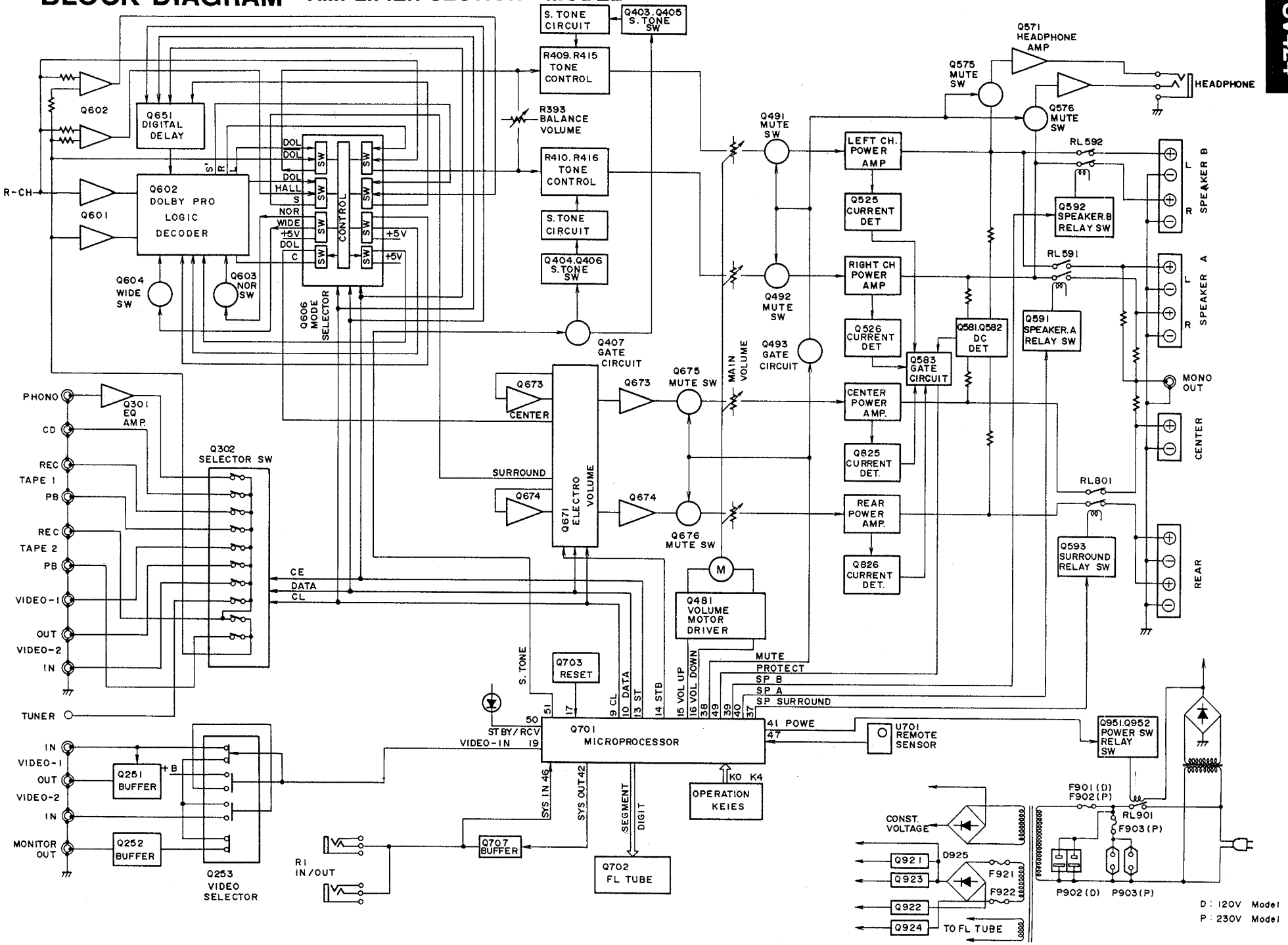
BLOCK DIAGRAM

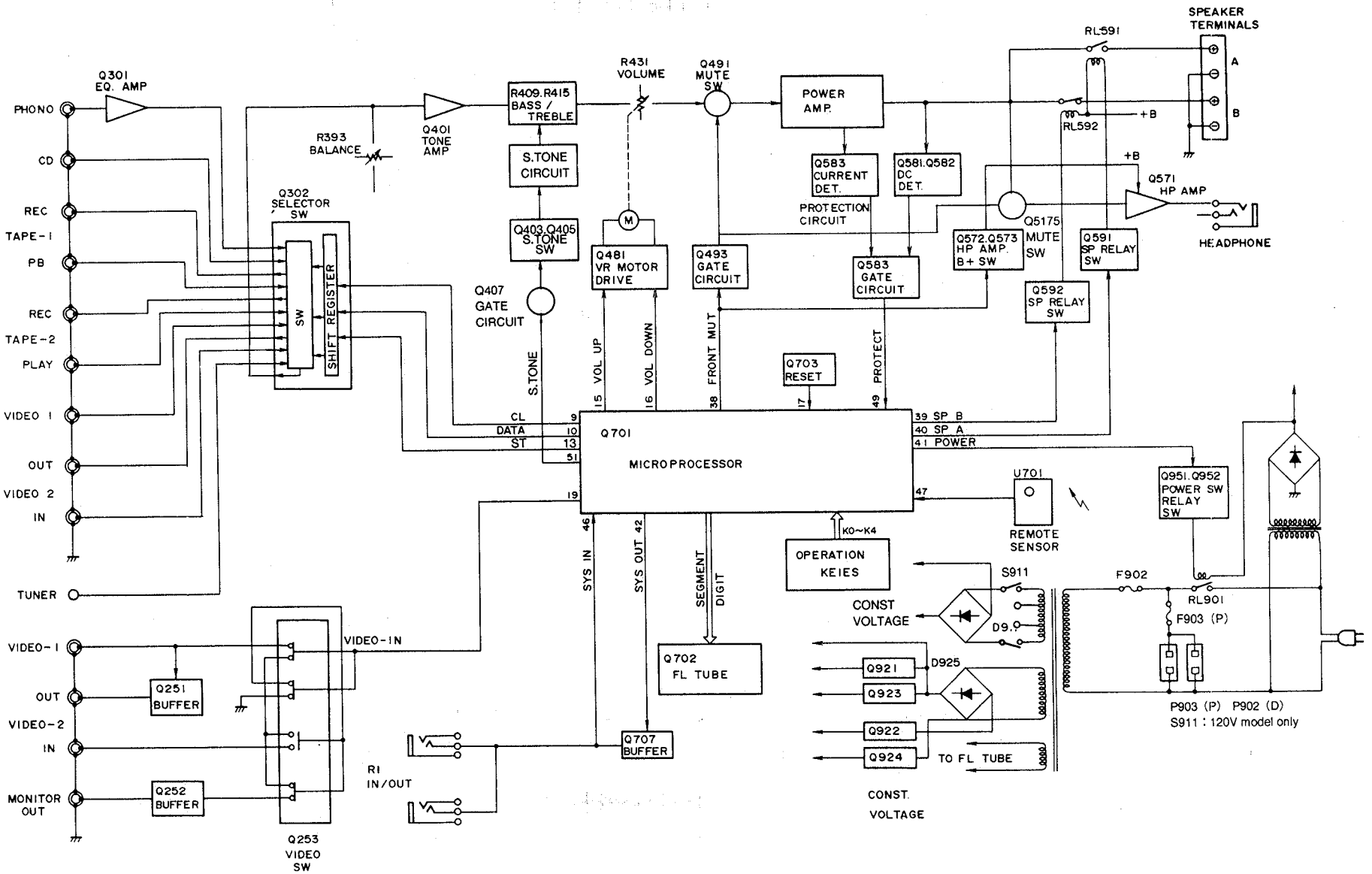
TX-SV424



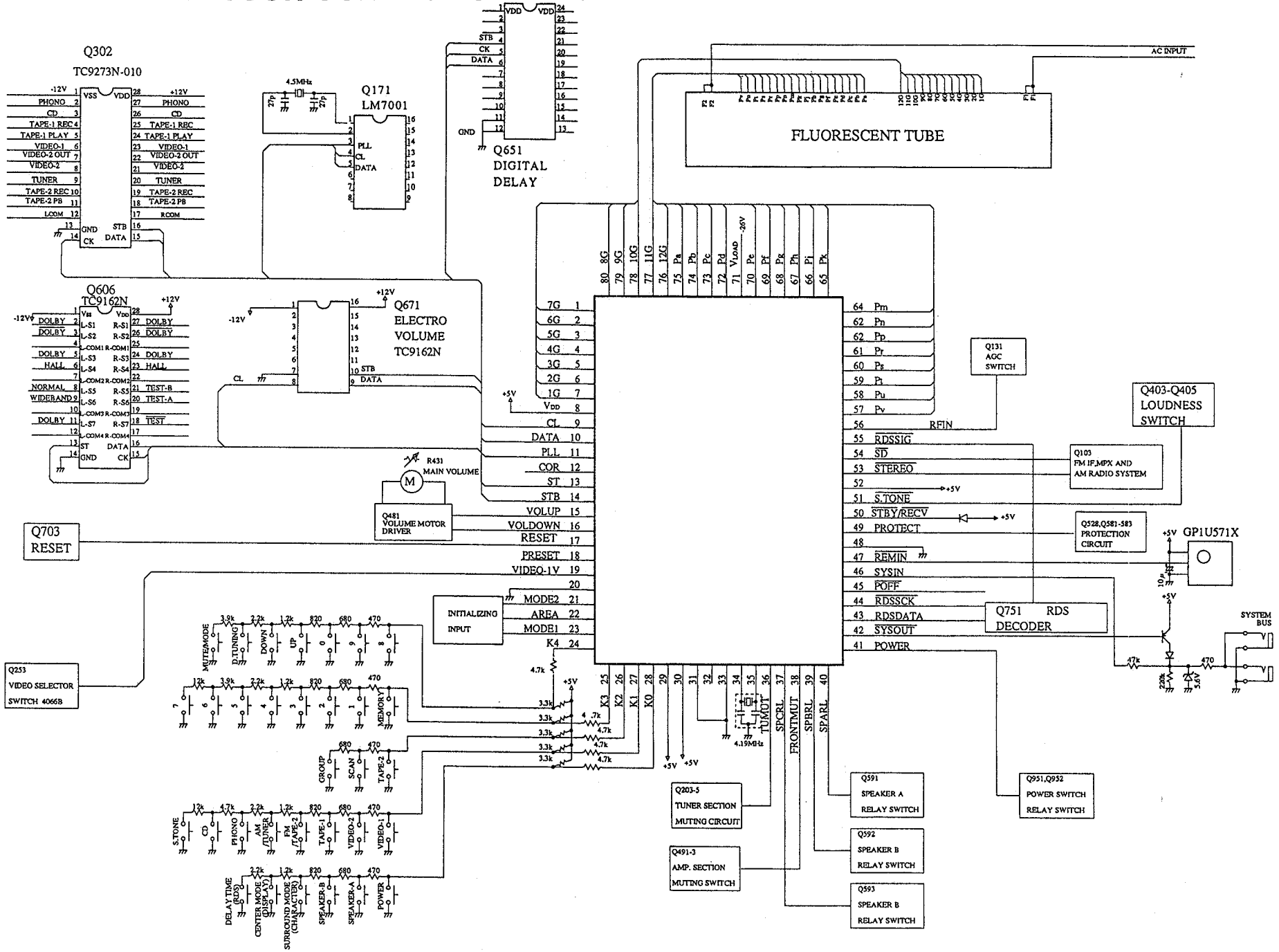

(P)
FM 75Ω
AM
ANT. CIRCUIT
Q1 RF AMP
TUNED CIRCUIT
Q2 MIX
IFT
FM IF AMP
FM LOCAL OSC
Q6 BUFFER
Q131 AGC SW
L101. L102 IFT
Q104 BUFFER
L104 BIRDIE FILTER
Q103 FM IF, MPX AND AM RADIO SYSTEM
L151 AM RF UNIT
X151, L152 AM IF FILTER
Q175 VCO STOP SW
Q201 PREAMP
L201 L.P.F
Q202 PREAMP
L202 L.P.F
Q203 MUTE SW
Q204 MUTE SW
Q205 GATE CIRCUIT
TU-L
TU-R
Q174 FM +8 SW
Q172. Q173 L.P.F
Q171 PLL SYNTHESIZER & CONTROLLER
Q751 RDS DECODER UPC 1346CS
Q701 MICROPROCESSOR
(D)
300 Ω
FM
75 Ω
AM
(P) : 230V model
(D) : 120V model

BLOCK DIAGRAM AMPLIFIER SECTION MODEL TX-SV424




Q301
EQ. AMP
PHONO
CD
REC
TAPE-1
PB
REC
TAPE-2
PLAY
VIDEO 1
OUT
VIDEO 2
IN
TUNER
R393
BALANCE
Q401
TONE
AMP
Q302
SELECTOR
SW
SW
SHIFT REGISTER
R409.R415
BASS /
TREBLE
S.TONE
CIRCUIT
Q403.Q405
S.TONE
SW
Q407
GATE
CIRCUIT
S.TONE
R431
VOLUME
Q481
VR MOTOR
DRIVE
VOL UP
VOL DOWN
Q491
MUTE
SW
Q493
GATE
CIRCUIT
FRONT MUT
POWER
AMP.
Q583
CURRENT
DET.
Q581.Q582
DC
DET.
PROTECTION
CIRCUIT
Q583
GATE
CIRCUIT
Q703
RESET
PROTECT
RL591
RL592
+B
SPEAKER
TERMINALS
A
B
Q571
HP AMP
HEADPHONE
Q5175
MUTE
SW
Q572.Q573
HP AMP.
B+ SW
Q591
SP RELAY
SW
Q592
SP RELAY
SW
CL 9
DATA 10
ST 13
51
19
15
16
38
17
49
39 SP B
40 SP A
41 POWER
47
Q701
MICROPROCESSOR
SYS IN 46
SYS OUT 42
SEGMENT
DIGIT
K0~K4
OPERATION
KEIES
U701
REMOTE
SENSOR
Q951.Q952
POWER SW
RELAY
SW
S911
F902
RL901
F903 (P)
P903 (P) P902 (D)
S911 : 120V model only
CONST
VOLTAGE
D9.0
D925
Q921
Q923
Q922
Q924
TO FL TUBE
CONST.
VOLTAGE
Q702
FL TUBE
Q707
BUFFER
VIDEO-IN
VIDEO-1
OUT
VIDEO-2
IN
MONITOR
OUT
Q251
BUFFER
Q252
BUFFER
Q253
VIDEO
SW
RI
IN/OUT

MICROPROCESSOR CONNECTION DIAGRAM



TERMINAL DESCRIPTION

Pin No.	Function	I/O	Description
1~7	7G~1G	O	Grid control output pin. On at the high level.
8	VDD		Power supply pin (+5V)
9	CL	O	Clock output pin. Connect to the terminals CK of function switch Q302, surround mode switch Q606, electro volume Q671, digital delay Q651 and PLL IC Q171.
10	DATA	O	Data output pin. Connect to the terminals DATA of function switch Q302, surround mode switch Q606, electro volume Q671and digital delay.
11	PLL	O	Chip enable output pin for PLL IC
13	SEL	O	Chip eneble output pin. Connect to the terminals ST of function switch Q302, surround mode switch Q606, electro volume Q671and digital delay.
15	VOLUP	O	Volume control output pin
16	VOLDOWN	O	Refer table 1.
17	$\overline{\text{RESET}}$	I	System reset input pin
20	AVSS		Ground pin of A/D converter
21	MODE	I	Initializing input of operation mode
22	BAND	I	Initializing input of band region
23	MODE1	I	Initializing input of operation mode
24	K4	I	Operation key connection pin
25	K3	I	Operation key connection pin
26	K2	I	Operation key connection pin
27	K1	I	Operation key connection pin
28	K0	I	Operation key connection pin
29	AVDO		Analogue power supply of A/D converter
30	AVREF		Reference voltage input pin of A/D converter
31	XT1		Crystal connection pin for sub system clock resonator
32	XT2		Not used.
33	VSS		Ground pin
34	X1		Resonator connection terminal for main system clock
35	X2		Connect the ceramic resonator 4.19MHz.
36	TMUT	O	Muting output pin for tuner section
38	SMUT	O	Muting output pin for amplifier section
40	RELAY	O	Relay control pin for speaker
41	POWER	O	Power source control output pin
42	$\overline{\text{SYSOUT}}$	O	System code output pin
43	RDSDATA	I	Data input pin from RDS decoder μPD1346CS
43	SYSIN	I	System code input pin
44	$\overline{\text{RDSSCK}}$	I	Clock input pin from RDS decoder IC μPD1346CS
45	$\overline{\text{POFF}}$	I	Power stoppage detector input pin
47	$\overline{\text{REMIN}}$	I	Remote control signal input pin
48	IC		Internal connection pin. Connect to the ground terminal.
49	PROTECT	I	Detector input pin of protection circuit. H:On
50	$\overline{\text{STBY}}$/$\overline{\text{RECV}}$	O	Stand-by and received indicator output pin
52	VDD		Power supply pin (+5V)
53	$\overline{\text{STEREO}}$	I	Detector input pin of FM stereo broadcast
54	$\overline{\text{SD}}$	I	Detector input pin of broadcast more than muting level
55	$\overline{\text{RDSSIG}}$	I	Detector input pin of RDS broadcast. L:RDS broadcast
56	RFIN	I	RF mode input pin. Local at the low level.
57~70	Pv~Pe	O	Segment output pins. On at the high level.
71	VLOAD	I	Pull-down resistor connection pin of controller and driver of FL.
72~75	Pd~Pa	O	Segment output pins. On at the high level.
76~80	12G~8G	O	Grid control output pin. On at the high level.

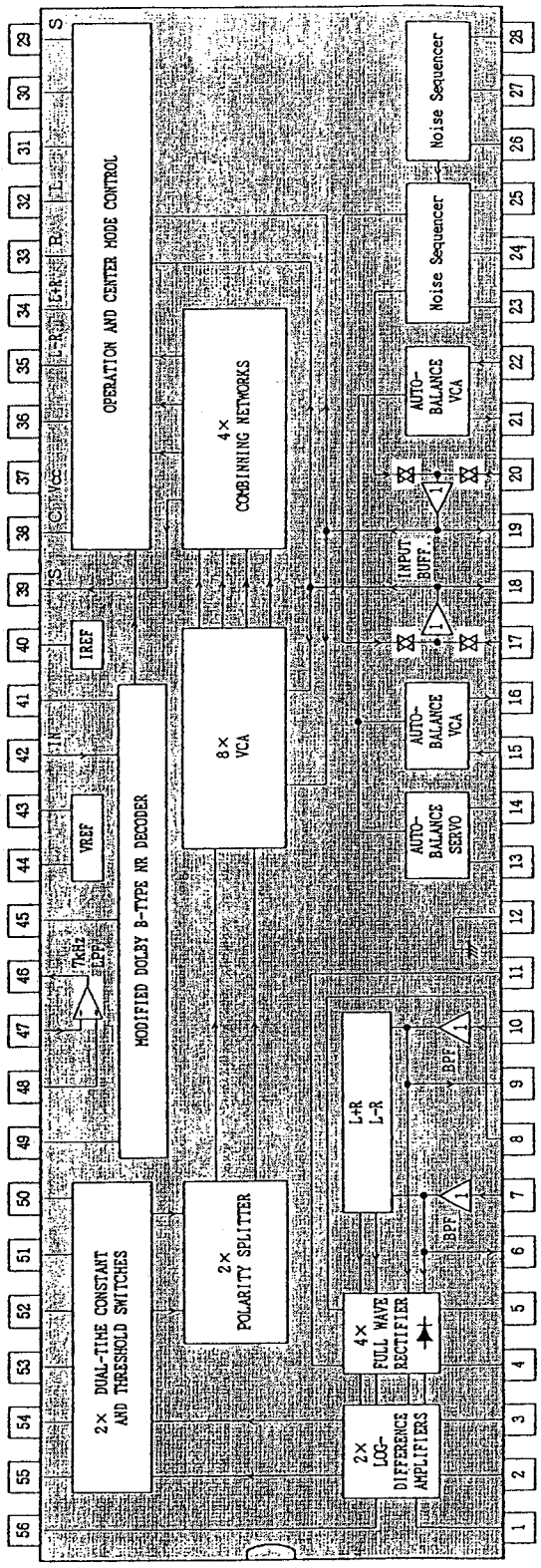
Operation	#39	#40
VOLUME UP	H	L
VOLUME DOWN	L	H
STOP	H	H

Table 1

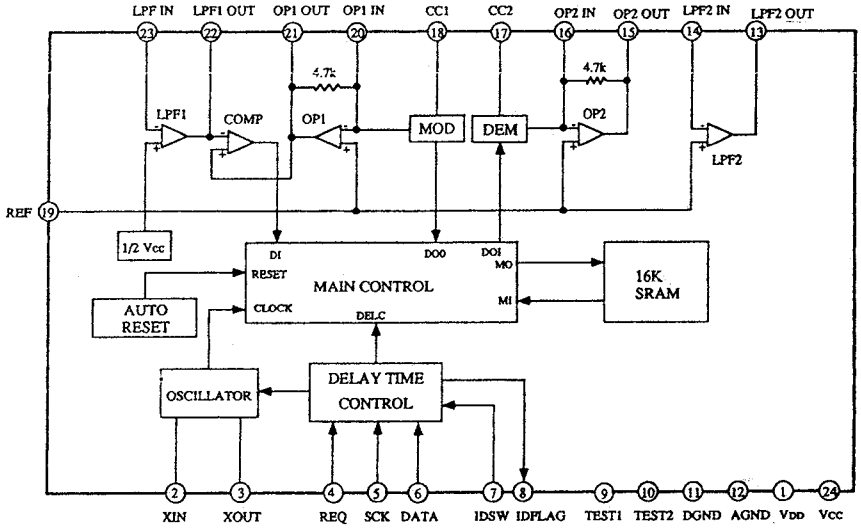
IC BLOCK DIAGRAM AND DESCRIPTIONS

NJM2177L / M69032P (Dolby Pro Logic)

C-RECT-OUT	1	56	S-RECT-OUT
R-RECT-OUT	2	55	VLR-TC2
L-RECT-OUT	3	54	VLR-TC1
S-RECT-TC	4	53	VCS-TC1
C-RECT-TC	5	52	VCS-TC2
L-BPF-OUT	6	51	VCS-TC3
L-BPF-IN	7	50	VLR-TC3
L-RECT-TC	8	49	NR-TC
R-BPF-OUT	9	48	LPF-NINV-IN LPF non-inversion output
R-BPF-IN	10	47	LPF-INV-IN LPF inversion input
R-RECT-TC	11	46	LPF-OUT LPF output
GND	12	45	NR-WT
AB-GATE	13	44	VREF
AB-HOLD-TC	14	43	VREF
L-AB-IN Auto balance L ch input	15	42	NR-IN NR input
L-AB-OUT Auto balance L ch output	16	41	NR-VCF
L-IN Left channel input	17	40	IREF
L-INBUF-OUT L ch input/Buffer output	18	39	S'-OUT Surround output before delay processing
R-INBUF-OUT R ch input/Buffer output	19	38	C-OUT Center channel output
R-IN Light channel input	20	37	Vcc
R-AB-OUT Auto balance R ch output	21	36	CENTER-MODE
R-AB-IN Auto balance R ch input	22	35	L-R-OUT Substracter output (L-R)
NOISE-CNT-B Signal/Noise selector	23	34	L+R-OUT Adder output (L+R)
NOISE-CNT-A Noise output selector	24	33	R-OUT Right channel output
NOISE-CNT-B Noise output selector	25	32	L-OUT Left channel output
NOISE-REF	26	31	MODE-CNT 2/3/4 channels switch
NOISE-HPF	27	30	CENTER-CNT Center channel ON/OFF switch
NOISE-LPF	28	29	S-OUT Surround output

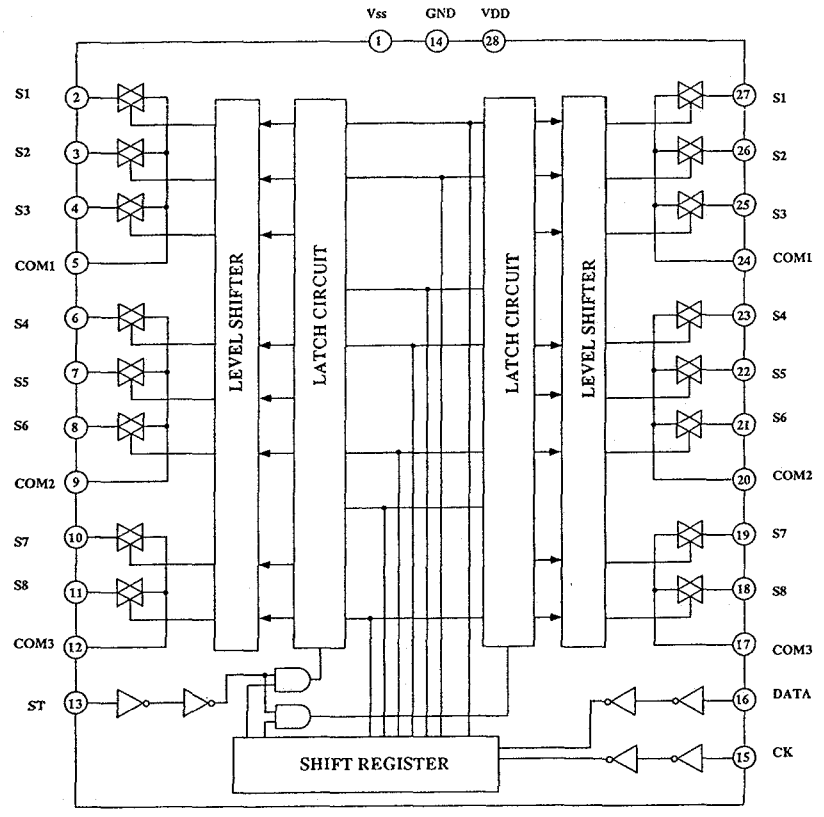


M65830P (Digitai Delay)

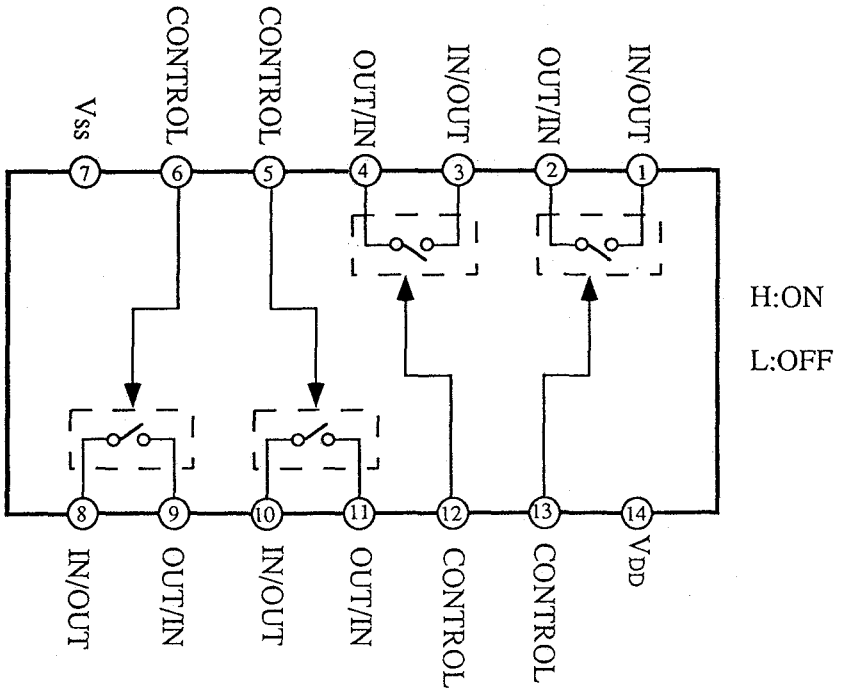


Pin No.	Mark	Function	I/O	Description
1	VDD	Digital power supply	-	
2	XIN	Resonator input	I	Connect the 2MHz ceramic resonator
3	XOUT	Resonator output	O	
4	REQ	Request	I	Data request input
5	SCK	Shift lock	I	Serial data shift clock input
6	DATA	Data	I	Serial data input
7	IDSW	ID switch	I	External input of 4th bit of ID code
8	IDFLAG	ID flag	O	Data input confirmation pulse and serial data output
9	TEST1	Test 1	-	Normal mode when low level
10	TEST2	Test 2	-	Normal mode when low level
11	D GND	Digital ground	-	
12	A GND	Analog ground	-	
13	LPF2 OUT	LPF filter 2 output	O	
14	LPF2 IN	LPF filter 2 input	I	
15	OP2 OUT	Operation amp. 2 output	O	
16	OP2 IN	Operation amp. 2 input	I	
17	CC2	Current control 2	-	Demodulation ADM control
18	CC1	Current control 1	-	Modulation ADM control
19	REF	Reference	-	Analog reference voltage=1/2VCC
20	OP1 IN	Operation amp. 1 input	I	
21	OP1 OUT	Operation amp. 1 output	O	
22	LPF1 OUT	LPF filter 1 output	O	
23	LPF1 IN	LPF filter 1 input	I	
24	VCC	Analog power supply	-	

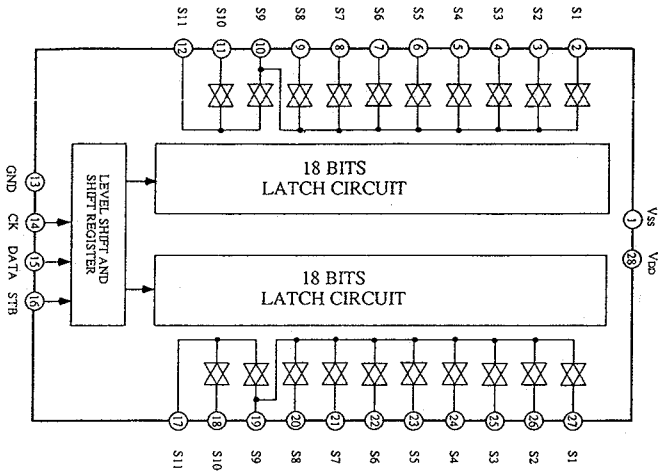
TC9162N (Function switch)



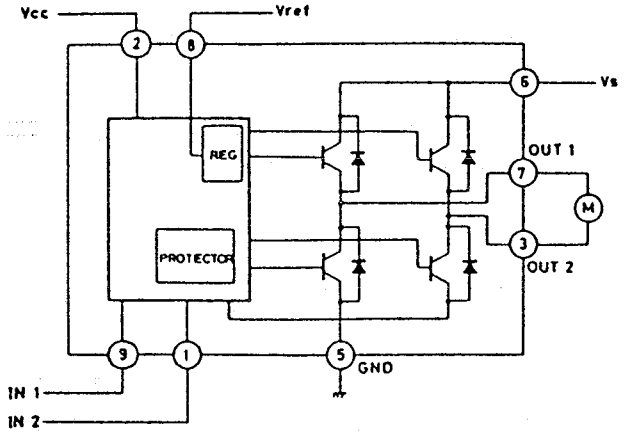
4066 (Analog Switch)



TC9273N-010 (Analog Switch)



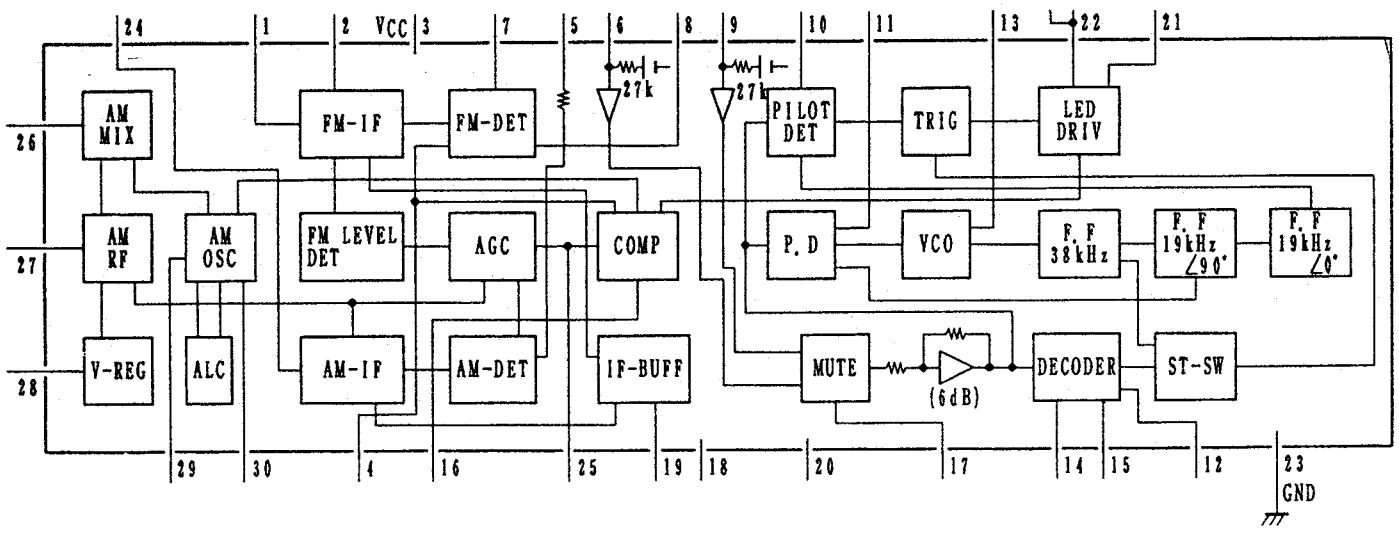
TA7291S (Volume driver)



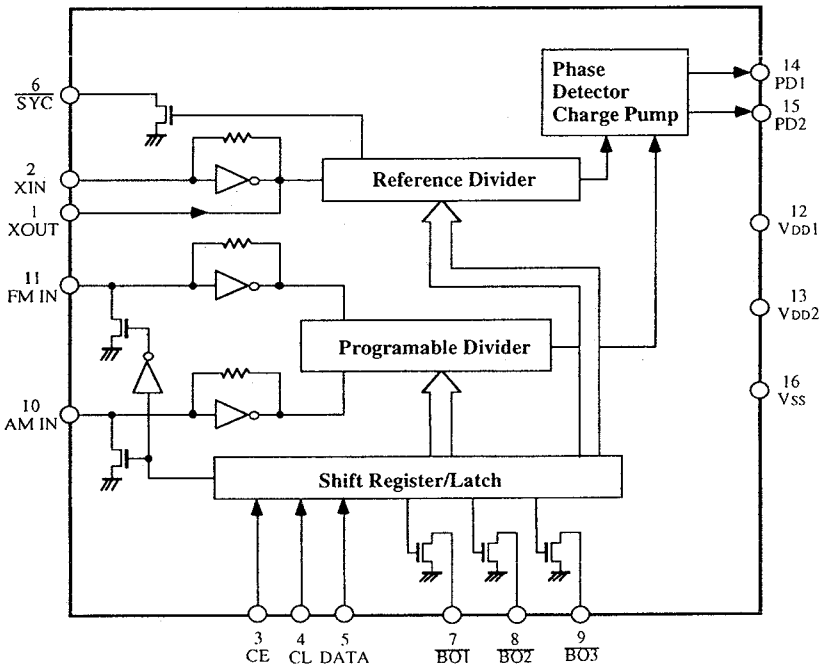
INPUT		OUTPUT		MODE
IN 1	IN 2	OUT 1	OUT 2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

CCW: Counter clockwise direction
CW: Clockwise direction

LA1851N (AM, FM IF and MPX)

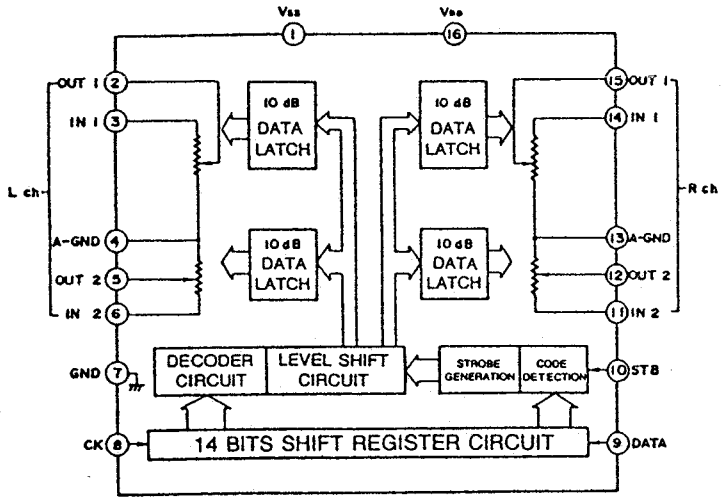


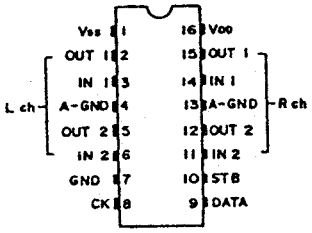
LM7001 (PLL Frequency Synthesized LSI)



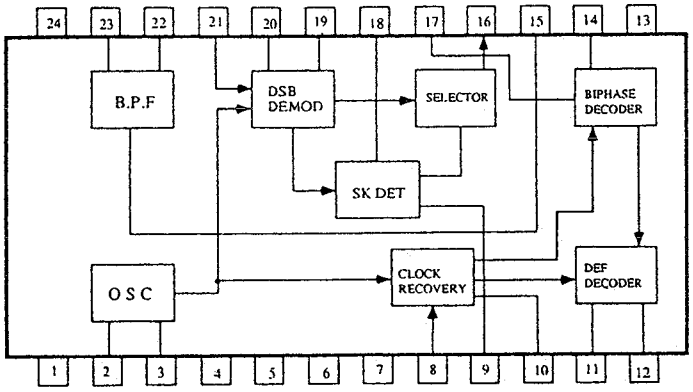
Pin No.	Terminal	Description
1	XOUT	Connect the 7.2MHz crystal resonator.
2	XIN	
3	CE	Chip enable terminal. Connect to the terminal PLLCE1 of microprocessor.
4	CL	Serial clock input terminal. Connect to the terminal PLLCL of microprocessor.
5	DATA	Serial data input terminal. Connect to the terminal PLLDATA of microprocessor.
6	$\overline{SYN}$	Not used.
7	$\overline{SAT}$/CANLE	Power source control terminal for DSR. Cable at the high level and Satellite at low.
8	LPF	LPF selector output.
9	ANT	Antenna selector output. A at high level and B at low level.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator input terminal.
12	VDD1	Power source terminal for back-up.
13	VDD2	Power source terminal.
14	PD1	Phase comparator output
15	PD2	Phase comparator output
16	Vss	Ground terminal

TC9213P (Eiectro Volume)





μPD1346CS (RDS Decoder)



No.	Terminal	Description	No.	Terminal	Description
1	Vcc	Supply voltage for the digital circuit	13	GND	Ground for the analog circuit
2	OSC IN	Resonator input	14	INTEG	Integrating filter terminal
3	OSC OUT	Resonator output	15	BPF ADJ	Adjustment fc of band pass filter
4	GND	Ground for the digital circuit	16	PSK OUT	Biphase signal output
5	TEST1	Test input	17	PSK IN	Biphase decoder input
6	TEST2	Test input	18	LPF SK	Low pass filter for the detection SK
7	OP.CTL	Control input of the operation stop	19	LPF Q	Low pass filter for the crossed detector
8	S/L CTL	Mode control input of the synchonizing detection	20	LPF I	Low pass filter for the synchronizing detector
9	SK OUT	SK detection output	21	DSB IN	DSB demodulator circuit input
10	RDS OUT	RDS synchonizing detection output	22	BPF OUT	Band pass filter output
11	CLOCK OUT	Bit rate clock output	23	BPF IN	Band pass filter input
12	DATA OUT	RDS data output	24	Vcc	Supply voltage for analog circuit

ADJUSTMENT PROCEDURES

Preparation

1.Input

FM mono:1kHz,75kHz devi.,60dB/ μ V

FM stereo:1kHz,75kHz devi.,60dB/ μ V

Pilot signal 19kHz 7.5kHz devi.

AM:400Hz 30% mod.

2.Outputs

Connect the non-inductive type resistors of 8 ohms to the speaker terminals A unless otherwise noted.

TX-SV424

3. Standard Knob Positions

Master Volume Control .....Maximum
Bass Control .....Center
Treble Control .....Center
Balance Control .....Center
Input selector .....CD
Tape 2 Monitor.....OFF
Muting .....OFF
Selective tone.....OFF
Speaker A .....ON
Speaker B.....OFF
Dolby Surround.....OFF
Center Mode .....Wide Band
Delay Time.....20 ms
Center Level .....0 dB
Rear Level .....0 dB

Idling Current Adjustment

Connect the DC voltmeter to the terminals P521, P522, and P821 (VCT and IID) on the main circuit pc board. Adjust the trim resistors R537, R538 and R837 so that the indicator of voltmeter becomes-3.25 ± 0.25mV.
NOTE:Adjust after switching on for 5 minutes.
Set Volume knob to the minimum position.

TX-8410/8410R

3. Standard Knob Positions

Master Volume Control .....Maximum
Bass Control .....Center
Treble Control .....Center
Balance Control .....Center
Input selector .....CD
Tape 2 Monitor.....OFF
Muting .....OFF
Loudness .....OFF
Speakers .....A

Idling Current Adjustment

Connect the DC voltmeter to the terminals P521, and P522 (VCT and IID) on the main circuit pc board. Adjust the trim resistors R537, and R538 so that the indicator of voltmeter becomes 3.25 ± 0.25mV.
NOTE:Adjust after switching on for 5 minutes.
Set Volume knob to the minimum position.

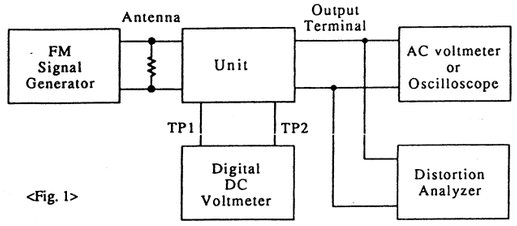
Set the unit to the test mode.

1. Press and hold down the CD button, then press the Power button.
2. " TEST-" is displayed on the display.
3. While "TEST-" is displayed, press the FM key.

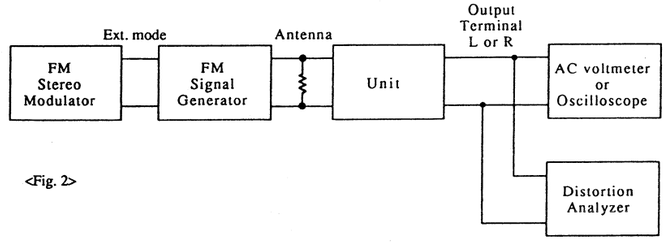
FM ADJUSTMENT

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.0MHz 1kHz 75kHz devi. 65dBf(60dB)	———	99.0MHz	DC voltmeter	L101	0±20mV	FM MUTE/MODE switch:ON/STEREO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IFT on the front end	Maximum	
	3					Distortion analyzer	L102	Minimum	
Stereo Distortion		Fig.2	99.0MHz Ext. mod.65dBf(60dB)	Channel L or R 1kHz	99.0MHz	Distortion analyzer	IFT on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig.2	99.0MHz Ext. mod. 65dBf(60dB)	Channel L 1kHz	99.0MHz	Channel R AC voltmeter	R202	Minimum	Maximum and same separation
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig.2	99.0MHz 21.2dBf(16dB) <P/W models> 23.2dBf(18dB) <D model>	———	99.0MHz	Oscilloscope or TUNED indicator	R101	Signal output or light on	
RDS		Fig.3	99.0MHz Ext. mod.40dB	RDS data or 57kHz 3% devi.	99.0MHz	Oscilloscope	R786	Maximum	TX-8410RDS only

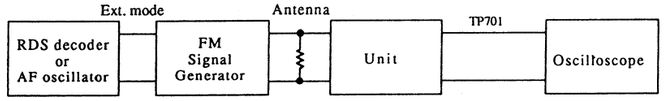
<Fig. 1>



<Fig. 2>



<Fig. 3>



AM ADJUSTMENT

120V model

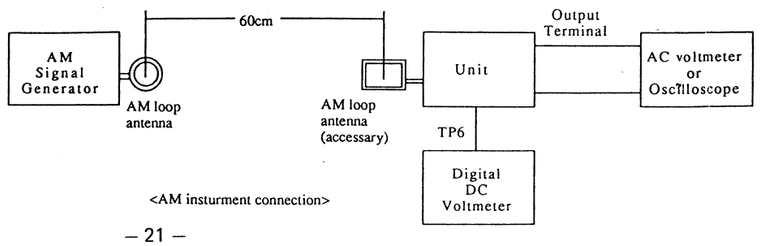
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L151	1.3±0.1V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum

Reference Specification
FM tuned voltage:87.9MHz~107.9MHz
More than 1.3V~Less than 10V
AM tuned voltage:530kHz~1710kHz
1.3±0.2V~Less than 9.0V

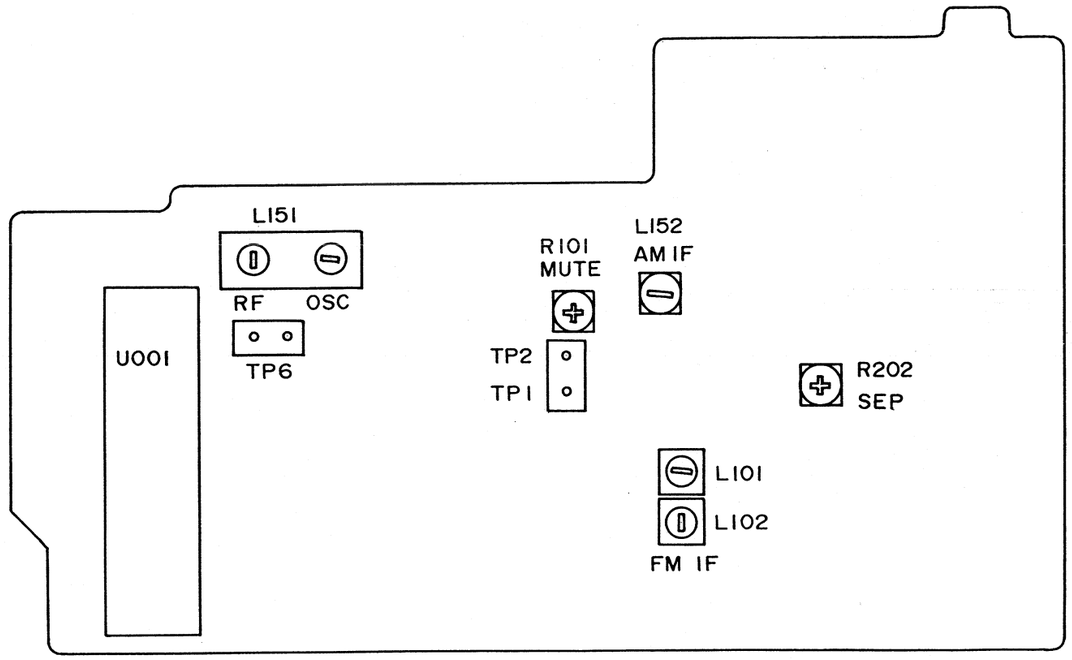
230V and worldwide models

Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block L151	1.3±0.1V
2	603kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	999kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L152	Maximum

Reference Specification
FM tuned voltage:87.5MHz~108.0MHz
More than 1.3V~Less than 10V
AM tuned voltage:522kHz~1611kHz
1.3±0.2V~Less than 9.0V
(230V model)
AM tuned voltage:531kHz~1602kHz
1.3±0.2V~Less than 9.0V
(Worldwide model)



<AM insturment connection>

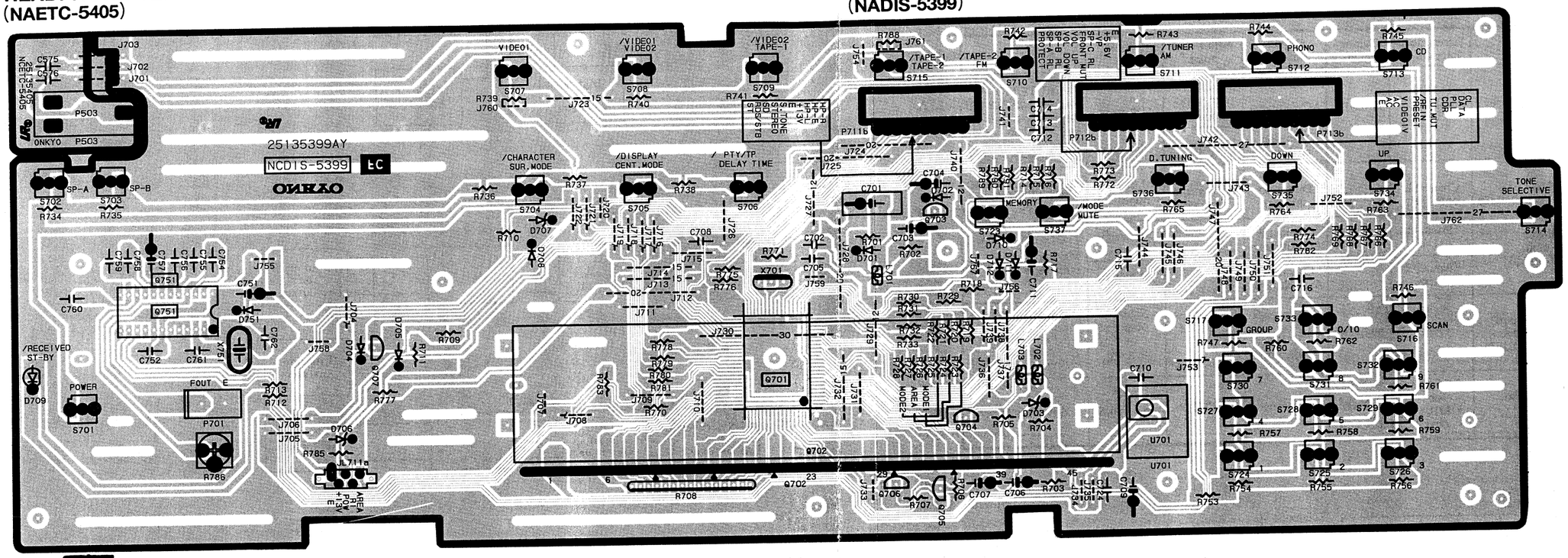


TX-SV424
TX-8410/TX-8410R

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

HEADPHONE TERMINAL PC BOARD (NAETC-5405)

DISPLAY CIRCUIT PC BOARD (NADIS-5399)


25135399AY
NCDIS-5399
ONKYO
P503
J703
J702
J701
C575
C576
S702
S703
R734
R735
SP-A
SP-B
VIDEO1
VIDEO2
TAPE-1
TAPE-2
S707
S708
S709
R739
R740
R741
J760
J723
J724
J725
P711b
P712b
P713b
R788
J761
S715
S710
R742
R743
R744
R745
S711
S712
S713
/TUNER AM
PHONO
CD
/TAPE-1 TAPE-2
/TAPE-2 FM
/CHARACTER SUR.MODE
/DISPLAY CENT.MODE
/PTY/TP DELAY TIME
R736
R737
R738
S704
S705
S706
D707
D708
R710
J722
J719
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J713
J712
J711
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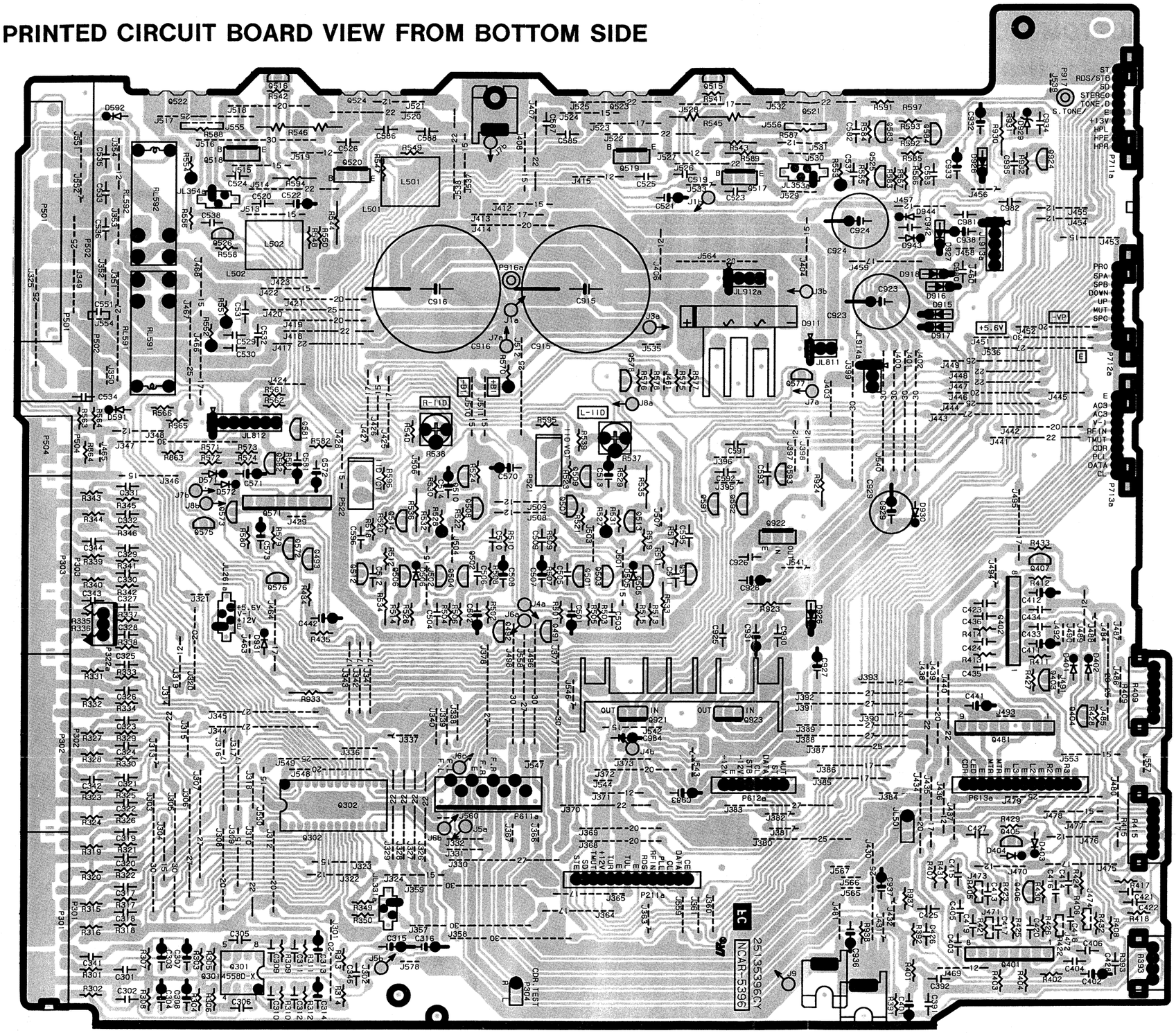
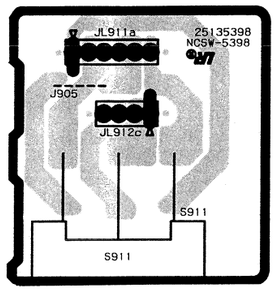
Q736
Q737
Q738
Q739
Q740

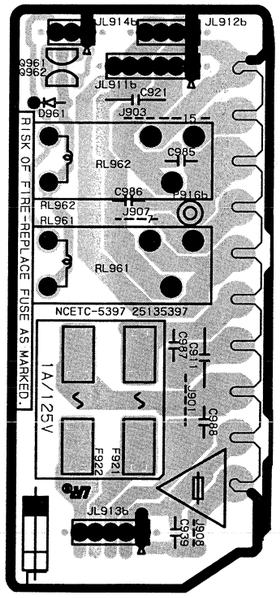
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



MAIN CIRCUIT PC BOARD (NAAR-5396)



SWITCH PC BOARD
(NASW-5398)
(TX-8410 120V model only)

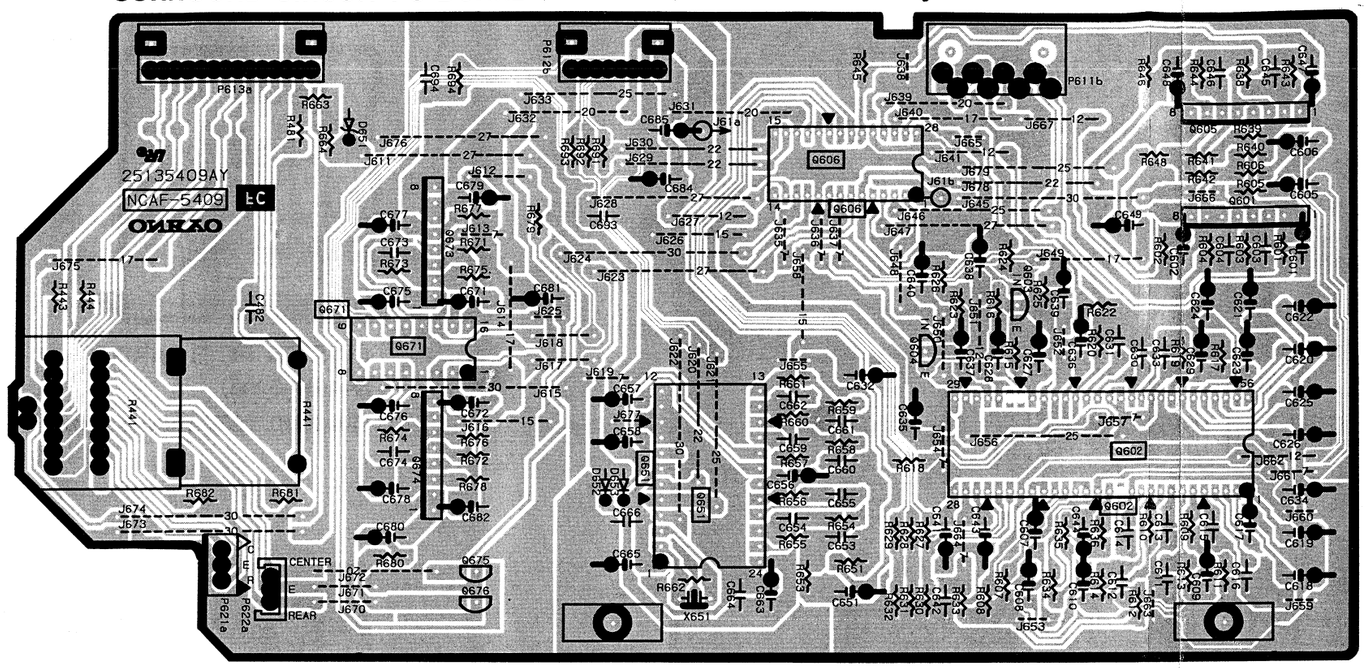


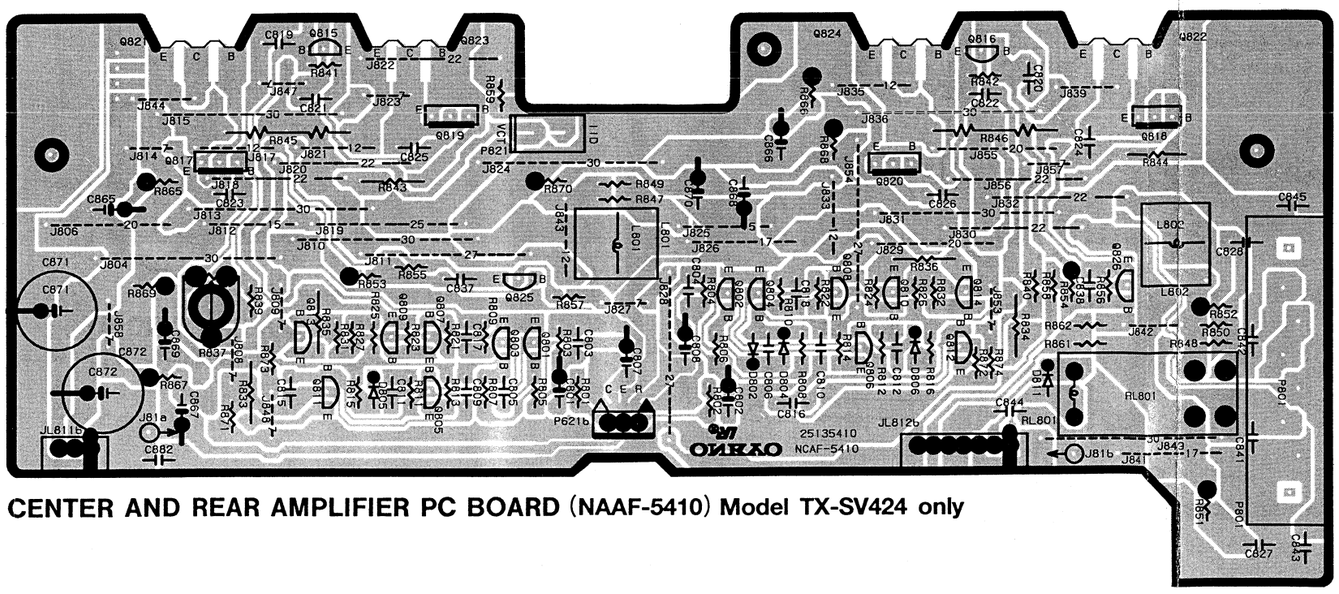
POWER SUPPLY CIRCUIT
PC BOARD (NAETC-5397)

TX-SV424
TX-8410/TX-8410R

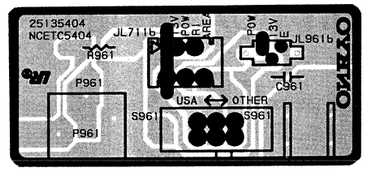
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

SURROUND CIRCUIT PC BOARD (NAAF-5409) Model TX-SV424 only

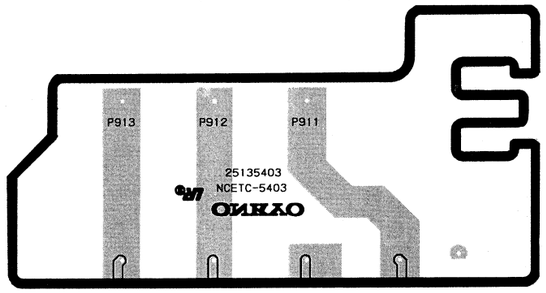




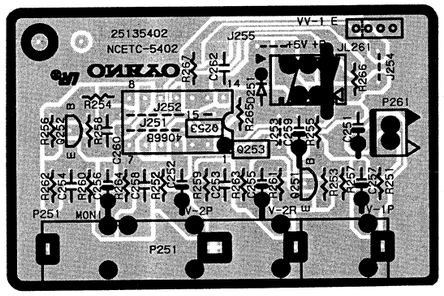
CENTER AND REAR AMPLIFIER PC BOARD (NAAF-5410) Model TX-SV424 only



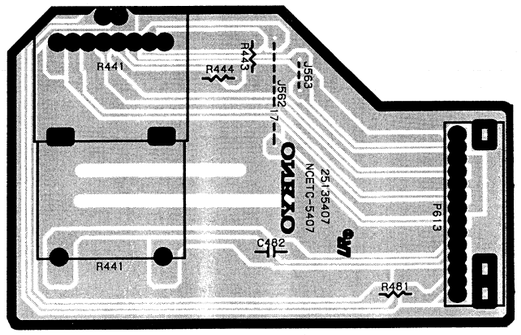
RI TERMINAL PC BOARD
(NAETC-5404)



PRIMARY CIRCUIT PC BOARD
(NAETC-5403)



VIDEO CIRCUIT PC BOARD
(NAETC-5402)



VOLUME CIRCUIT PC BOARD
(NAETC-5407)
Model TX-8410 only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Wire holder	
JL711a	25051089	NSCT-5P876
	Plugs	
P711b~P713b	25055695	NPLG-10P615
	Switches	
S701~S717	25035652	NPS-111-S604
S723~S737	25035652	NPS-111-S604
	Holder	
Q702a	27190937AY	FL

TUNER CIRCUIT PC BOARD(NARF-5400-1/1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end	
U001	240098Y	ENV172C6G1 <D>
	240103Y	ENV172A2G1 <P/W>
	ICs	
Q103	22240749Y	LA1851N
Q171	22240090	LM7001
	Transistors	
Q101	2210746	2SC945A-P <P/W>
Q102	2211723	2SC1923-O
Q172	2212445	2SK365-GR
Q173	2213284	2SC1740S-R
Q174,Q175	2213510	DTA114ES
Q201,Q202	2213284	2SC1740S-R
Q203,Q204	2212794	2SD1468-R
Q205	2213510	DTA114ES
	Diode	
D171	224470512	MTZJ5.1B
	Coils and transformers	
L101	233480AY	NFIF-4090
L102	233481Y	NFIF-4091
L103	233454M022	NCH-1452
L104	233383	NMC-6070 <P/W>
L151	231226Y	NMRF-7069
L152	232166Y	NMIF-4089
L201,L202	233355A	NMC-4059 <P/W>
	Ceramic filters	
X101	3010071	SFE10.7MA5
X102	3010071	SFE10.7MA5 <P/W>
X103	3010071	SFE10.7MA5 <D>
	3010130	SFE10.7MZ2A <P/W>
X151	3010123	SFZ-450JL
	Resonators	
X171	3010158 or	XTL7.2M or
	3010141	XTL7.2M,Crystal
X201	3010227Y	CSB456F15,Ceramic
	Capacitors	
C001	354741019	100 μ F,16V,Elect.
C107-C109	354780229	2.2 μ F,50V,Elect.
C110	354741019	100 μ F,16V,Elect.
C133	354784799	0.47 μ F,50V,Elect.
C151	354741009	10 μ F,16V,Elect.
C155,C156	354741009	10 μ F,16V,Elect.
C157	374723324	3300pF±5%,50V,Plastic
C158	374721534	0.015 μ F±5%,50V,Plastic <D>
	374721034	0.01 μ F±5%,50V,Plastic <P/W>
C159	354721019	100 μ F,6.3V,Elect.
C171	354741019	100 μ F,16V,Elect.
C174	374723334	0.033 μ F±5%,50V,Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminals	
P301~P303	25045300	NPJ-6PDBL159
P501	25060224	NTM-8PDML146
P504	25045302	NPJ-1PDBL161
	Sockets	
P711a~P713a	25051046	NSCT-10P833
	Plugs	
P211a,P613a	25055652	NPLG-14P608
P611a	25055678	NPLG-8P634
P612a	25055649	NPLG-8P605
	Wire holders	
JL261a	25051088	NSCT-4P875
JL811a	25051107	NSCT-3P894
JL812a	25051111	NSCT-7P898
JL912a	25051110	NSCT-4P895
JL913a	25051109	NSCT-5P896
	Radiators	
Q921a	27160209	RAD-67
D911a	27160227	RAD-076

POWER SUPPLY CIRCUIT PC BOARD(NAETC-5397-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
F921,F922	252156Y	⚠ 1A-UL/T-237, Secondary fuse <D>
	252070	⚠ 1A-SE-EAK, Secondary fuse <P/W>
F921a,F922a	25050065	⚠ YSH403T,Fuseholder
JL912b	25051108	NSCT-4P895,Wire holder
JL913b	25051109	NSCT-5P896,Wire holder
A961	29360398	⚠ Fuse label <P/W>

DISPLAY CIRCUIT PC BOARD(NADIS-5399-1/1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Remote sensor	
U701	24130010	HC-312
	IC	
Q701	22240901	μ PD78042AGF-060
	FL tube	
Q702	212143	FIP13QM8
	Transistors	
Q703	221282	DTC144ES
Q704~Q706	2213284	2SC1740S-R
Q707	2213510	DTA114ES
	Diodes	
D701,D702	223163	1SS133
D703	224470913	MTZJ9.1C
D704,D705	223163	1SS133
D706,D707	224470562	MTZJ5.6B
D708	223163	1SS133
D709	225291D	SEL4910D-D,LED
D710~D712	223163	1SS133
	Coils	
L701~L703	233454K220	NCH-1452,220K
	Resonator	
X701	3010163	CST4.19MGW,Ceramic
	Capacitors	
C701	3000075	0.047F, 5.5V, Super
C702	375524744	0.47 μ F±5%,50V,Plastic
C703	354721019	100 μ F,6.3V,Elect.
C704,C706,C707	354780109	1 μ F,50V,Elect.
C709,C711	354721019	100 μ F,6.3V,Elect.

PRINTED CIRCUIT BOARD-PARTS LIST

MODEL TX-SV424

MAIN CIRCUIT PC BOARD(NAAR-5396-1/1A)

CIRCUIT NO.	PART NO.		DESCRIPTION
	ICs		
Q301	222502		NJM4558D-X
Q302	22240881		TC9273N-010
Q401,Q402	22240247 or		BA15218N or
	22240293		NJM4558L-D
Q481	22240239		TA7291S
Q571	22240752		NJM4556L
Q921	222780125NEC		μPC78M12AHF
Q922	222790125		79M12HF
Q923	222780565JRC		NJM78M56FA
	Transistors		
Q403~Q406	2211945		2SK246-GR
Q407	2213510		DTA114ES
Q491,Q492	2213631 or		RN1241-A or
	2213632		RN1241-B
Q493	2213510		DTA114ES
Q501~Q504	2211732 or	*	2SC1845-F or
	2211733	*	2SC1845-E
Q505,Q506	2213354		2SA933S-R
Q507,Q508	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q509,Q510	2213284		2SC1740S-R
Q511,Q512	2211353 or		2SA940-O or
	2211354		2SA949-Y
Q513,Q514	2211633 or		2SC2229-O or
	2211634		2SC2229-Y
Q515,Q516	2213284		2SC1740S-R
Q517,Q518	2203010 or	*	2SC5171 or
	2201945	*	2SD1763-E
Q519,Q520	2203000 or	*	2SA1930 or
	2201935	*	2SB1186-E
Q521,Q522	2203063,	*	2SC5198-O,
	2202524,	*	2SC4468-Y,
	2202526,	*	2SC4468-P,
	2202523 or	*	2SC4468-O or
	2202293	*	2SC3182N-O
Q523,Q524	2203053,	*	2SA1941-O,
	2202514,	*	2SA1695-Y,
	2202516,	*	2SA1695-P,
	2202513 or	*	2SA1695-O or
	2202283	*	2SA1265N-O
Q525,Q526	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q572	221282		DTC144ES
Q573	2211164		2SC2120-Y
Q575,Q576	2213631 or		RN1241-A or
	2213632		RN1241-B
Q581,Q582	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q583	2211792 or		2SA992-F or
	2211793		2SA992-E
Q591~Q593	2213640		DTC123JS
Q924	2211455		2SA1015-GR
	Diodes		
D401~D404	223163		1SS133
D505,D506	223163		1SS133
D571,D572	223163		1SS133
D591,D592	223163		1SS133
D911	22380038		RBV602

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D915~D918	22380032	1SR139-100
D926~D928	22380032	1SR139-100
D929	224473304	MTZJ33D
D930,D931	223163	1SS133
	Relaies	
RL591,RL592	25065485	NRL-2P2A-DC24-086
	Coils	
L501,L502	231176S	S-1.3C
	Capacitors	
C303,C304	354741009	10μF,16V,Elect.
C307,C308	354721019	100μF,6.3V,Elect.
C309,C310	374726224	6200pF±5%,50V,Plastic
C311,C312	374721824	1800pF±5%,50V,Plastic
C313~C316	354741009	10μF,16V,Elect.
C391,C392	374721015	100pF±10%,50V,Plastic
C401,C402	354741009	10μF,16V,Elect.
C411,C412	354741009	10μF,16V,Elect.
C413~C416	374721044	0.1μF±5%,50V,Plastic
C417~C420	374721024	1000pF±5%,50V,Plastic
C421,C422	374721534	0.015μF±5%,50V,Plastic
C433,C434	374721534	0.015μF±5%,50V,Plastic
C435,C436	374721015	100pF±10%,50V,Plastic
C441	354721019	100μF,6.3V,Elect.
C442	354780109	1μF,50V,Elect.
C501,C502	354741009	10μF,16V,Elect.
C503,C504	374721015	100pF±10%,50V,Plastic
C507,C508	354724719	470μF,6.3V,Elect.
C513,C514	354722219	220μF,6.3V,Elect.
C521,C522	354772209	22μF,63V,Elect.
C529~C532	374721044	0.1μF±5%,50V,Plastic
C570	354771019	100μF,63V,Elect.
C571,C573	354741009	10μF,16V,Elect.
C572	353741009	10μF,16V,Elect.
C581	354721019	100μF,6.3V,Elect.
C915,C916	3504287	8200μF,56V,Elect.
C923	354761029	1000μF,35V,Elect.
C924	354763319	330μF,35V,Elect.
C927,C928	354741009	10μF,16V,Elect.
C931	354741009	10μF,16V,Elect.
C932,C933	354781019	100μF,50V,Elect.
C936,C937	354741009	10μF,16V,Elect.
C938	354781009	10μF,50V,Elect.
C983,C984	354741009	10μF,16V,Elect.
	Resistors	
R393	5104288	N11RLC250KWT20Z,Balance
R409,R415	5104356	N14RLC100KWT20Z,Tone
R527,R528	443524734	47 kOhm±5%,1/2W,Metal oxide
R533,R534	4500081	27 Ohm±5%,1/4W,Metal
R535,R536	4500095	100 Ohm±5%,1/4W,Metal
R537,R538	5210259	N06HR 2KBC, Trim
R543,R544	4500107	330 Ohm±5%,1/4W,Metal
R545,R546	4000132	RGC55 0.22 OHMK, Metal plate
R551,R552	453630824	8.2 Ohm±5%,1W,Metal
R553,R554	443523924	3.9 kOhm±5%,1/2W,Metal oxide
R570	443522204	22 Ohm±5%,1/2W,Metal oxide
R923	4500055	2.2 Ohm±5%,1/4W,Metal
R924	4500069	8.2 Ohm±5%,1/4W,Metal
R927,R930	4500079	22 Ohm±5%,1/4W,Metal
R933	4500087	47 Ohm±5%,1/4W,Metal

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C175	354780229	2.2 μ F,50V,Elect.
C176	374722234	0.022 μ F±5%,50V,Plastic
C177	354782299	0.22 μ F,50V,Elect.
C180	354721019	100 μ F,6.3V,Elect.
C201,C202	354780109	1 μ F,50V,Elect.
C203	354783399	0.33 μ F,50V,Elect.
C204	354741019	100 μ F,16V,Elect.
C205,C206	374721534	0.015 μ F±5%,50V,Plastic <D>
	374721034	0.01 μ F±5%,50V,Plastic <P>
	374721234	0.012 μ F±5%,50V,Plastic <W>
C207~C210	354741009	10 μ F,16V,Elect.
C213~C216	354741009	10 μ F,16V,Elect. <P/W>
C217	354780229	2.2 μ F,50V,Elect.
	Resistors	
R101	5210263	N06HR 20KBC, Trim
R202	5210261	N06HR 5KBC, Trim
	Terminals	
P101	25060160	NTM-4PDML086 <D>
	25060117	NTM-2PDML051 <P/W>
	Socket	
P211b	25050986	NSCT-14P773
	Shield plate	
	27150346	<P/W>

POWER SUPPLY CIRCUIT PC BOARD(NAPS-5401-1/1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q951	221282	DTC144ES
Q952	2213650	DTD113ZS
	Diodes	
D951~D954	22380032	1SR139-100
D955	223163	1SS133
	Capacitors	
C901	3500191Y	⚠ DE7150FZ103PAC400V/125V
C952	354742219	220 μ F,16V,Elect.
	Resistors	
R901	431523355	⚠ 3.3 MOhm±20%,1/2W,Solid <D>
R951	453530824	8.2 Ohm±5%,1/2W,Metal
	Fuses	
F901	252164Y	⚠ 5A-UL/T-237, Primary <D/W>
F902	252076	⚠ 3.15A-SE-EAK, Primary <P/W>
F903	252075	⚠ 2.5A-SE-EAK, Primary <P>
	Fuseholders	
F901a	25050065	⚠ YSH403T <D/W>
F902a	25050065	⚠ YSH403T <P/W>
F903a	25050065	⚠ YSH403T <P>
	Socket	
JL961a	25051087	NSCT-3P874
	AC outlet	
P902	25051126	⚠ NSCT-4P913 <D>
P903	25051125	⚠ NSCT-4P912 <P/W>
	Plug	
P901a	25055675	NPLG-2P631 <D/P>
	Relay	
RL901	25065483	⚠ NRL-1P5A-DC12-084
	Power transformer	
T902	2300670A	⚠ NPT-1111D <D>
	2300671AY	⚠ NPT-1111P <P>
	2300672AY	⚠ NPT-1111DG <W>

CIRCUIT NO.	PART NO.	DESCRIPTION
	Switch	
S901	25065437	NSS-22157P, Voltage selector <W>

VIDEO CIRCUIT PC BOARD(NAETC-5402-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q251,Q252	2212115 or	2SC2458-GR or
	2213284	2SC1740S-R
	IC	
Q253	222840661	4066B
	Diode	
D251	223163	1SS133
	Capacitors	
C251,C252	354721019	100 μ F,6.3V,Elect.
C255,C256	354724719	470 μ F,6.3V,Elect.
C257	354721019	100 μ F,6.3V,Elect.
C259	354741019	100 μ F,16V,Elect.
	Wire trap	
JL261b	25055625	NPLG-4P587
	Terminal	
P251	25045339	NPJ-4PDYE190

RI TERMINAL PC BOARD(NAETC-5404-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
P961	25045330	NPJ-2PDBL184,Terminal RI
JL711b	25055626	NPLG-5P588,Wire trap
JL961b	25051087	NSCT-3P874,Wire holder
S961	25065286	NSS-22112,Band switch <W>

HEADPHONE TERMINAL PC BOARD(NAETC-5405-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
P503	25045255	YKB21-5009,Headphone terminal

SURROUND CIRCUIT PC BOARD(NAAF-5409-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q601,Q605	22240247 or	BA15218N or
Q673,Q674	22240293	NJM4558L-D
Q602	22240683 or	NJM2177L or
	22240692	M69032P
Q606	22240398 or	TC9162N or
	22240751	NJU7311L
Q651	22240686 or	M65830P or
	22240687	NJU9701D
Q671	22240266	TC9213P
	Transistors	
Q603,Q604	2213631	RN1241-A
Q675,Q676	2213631	RN1241-A
	Diodes	
D651	224470562	MTZJ5.6B
D652,D653	223163	1SS133
	Capacitors	
C601,C602	354780229	2.2 μ F,50V,Elect.
C605,C606	354741009	10 μ F,16V,Elect.
C607~C610	354781099	0.1 μ F,50V,Elect.
C613,C614	374724734	0.047 μ F±5%,50V,Plastic
C615,C616	374722234	0.022 μ F±5%,50V,Plastic
C617~C620	354781099	0.1 μ F,50V,Elect.
C621,C622	354780479	4.7 μ F,50V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C623~C627	354782299	0.22 μ F,50V,Elect.
C628	354741009	10 μ F,16V,Elect.
C629	354786899	0.68 μ F,50V,Elect.
C630	374724734	0.047 μ F±5%,50V,Plastic
C631	374725624	5600pF±5%,50V,Plastic
C632	354780229	2.2 μ F,50V,Elect.
C634	354722219	220 μ F,6.3V,Elect.
C635	354741019	100 μ F,16V,Elect.
C636-C641	354741009	10 μ F,16V,Elect.
C642	374724724	4700pF±5%,50V,Plastic
C643	354741009	10 μ F,16V,Elect.
C644	391141007	10 μ F,16V,Elect.
C647~C649	354741009	10 μ F,16V,Elect.
C651	354780229	2.2 μ F,50V,Elect.
C653	374723924	3900pF±5%,50V,Plastic
C655	374726834	0.068 μ F±5%,50V,Plastic
C656	354744709	47 μ F,16V,Elect.
C657,C658	354781099	0.1 μ F,50V,Elect.
C659	374726834	0.068 μ F±5%,50V,Plastic
C660	374725624	5600pF±5%,50V,Plastic
C661	374724724	4700pF±5%,50V,Plastic
C663,C665	354721019	100 μ F,6.3V,Elect.
C666	375524744	0.47 μ F±5%,50V,Plastic
C671,C672	354780229	2.2 μ F,50V,Elect.
C675.C676	354741009	10 μ F,16V,Elect.
C677,C678	354780229	2.2 μ F,50V,Elect.
C679~C682	354741009	10 μ F,16V,Elect.
C684,C685	354741009	10 μ F,16V,Elect.
	Resonator	
X651	3010217	CST2.04MG040,Ceramic
	Resistor	
R441	5104332Y	N16RQL100KBT25F
	Sockets	
P611b	25051127	NSCT-8P914
P612b	25050983Y	NSCT-8P770
P613b	25050986Y	NSCT-14P773
P621a	2000802UL	NSAS-6P758
	Plug	
P622a	25055405	NPLG-3P387

CENTER AND REAR AMPLIFIER CIRCUIT PC BOARD (NAAF-5410-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q801~Q804	2211732 or	* 2SC1845-F or
	2211733	* 2SC1845-E
Q805,Q806	2213354	2SA933S-R
Q807,Q808	2211732 or	2SC1845-F or
Q825,Q826	2211733	2SC1845-E
Q809,Q810	2213284	2SC1740S-R
Q811,Q812	2211353	2SA940-O
Q813,Q814	2211633	2SC2229-O
Q815,Q816	2213284	2SC1740S-R
Q817,Q818	2203010	2SC5171
Q819,Q820	2203000	2SA1930
Q821,Q822	2203043,	* 2SC5197-O,
	2202254,	* 2SC4467-Y,
	2202256,	* 2SC4467-P,
	2202253 or	* 2SC4467-O or
	2202503	* 2SC3181N-O
Q823,Q824	2203033,	* 2SA1940-O,
	2202244,	* 2SA1694-Y
	2202246,	* 2SA1694-P
	2202243 or	* 2SA1694-O or
	2202493	* 2SA1264N-O
	Diodes	
D805,D806	223163	1SS133
D811	223163	1SS133
	Coils	
L801,L802	231176S	S-1.3C
	Capacitors	
C801,C802	354741009	10 μ F,16V,Elect.
C807	354742219	220 μ F,16V,Elect.
C808	354744709	47 μ F,16V,Elect.
C821,C822	374724734	0.047 μ F±5%,50V,Plastic
C827,C828	374724734	0.047 μ F±5%,50V,Plastic
C865~C867	354700109	1 μ F,160V,Elect.
C868,C870	354770109	1 μ F,63V,Elect.
C869	354700109	1 μ F,160V,Elect.
	Resistors	
R826	443524734	47 kOhm±5%,1/2W,Metal oxide
R833,R834	4500081	27 Ohm±5%,1/4W,Metal
R835,R836	4500095	100 Ohm±5%,1/4W,Metal
R837	5215043	N08HR 2KBC, Trim
R843,R844	4500107	330 Ohm±5%,1/4W,Metal
R845	4000132	RGC55 0.22 OHMK, Metal plate
R846	4000131	RGC22 0.22 OHMK, Metal plate
R851,R852	453630824	8.2 Ohm±5%,1W,Metal
R853,R854	443523924	3.9 kOhm±5%,1/2W,Metal oxide
R865,R866	453502204	22 Ohm±5%,1/2W,Metal
R867~R870	443522204	22 Ohm±5%,1/2W,Metal oxide
	Relay	
RL801	25065485	NRL-2P2A-DC24-086
	Terminal	
P801	25060191	NTM-6PDML113
	Plug	
P621b	25055234	NPLG-3P218
	Wire traps	
JL811b	25050280	NSCT-3P108
JL812b	25050284	NSCT-7P112

NOTE: <D>:120V model only
<P>:230V model only
<W>:Worldwide model only

CAUTION: Replacement for transistor of mark *, if necessary, must be made from the same beta group (HFE) as the original type.

NOTE:THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

TX-8410
TX-8410R

PRINTED CIRCUIT BOARD – PARTS LIST

MODEL TX-8410/TX-8410R

MAIN CIRCUIT PC BOARD(NAAR-5396-3/3A)

CIRCUIT NO.	PART NO.		DESCRIPTION
	ICs		
Q301	222502		NJM4558D-X
Q302	22240881		TC9273N-010
Q401,Q402	22240247 or		BA15218N or
	22240293		NJM4558L-D
Q481	22240239		TA7291S
Q571	22240752		NJM4556L
Q921	222780125NEC		μPC78M12AHF
Q922	222790125		79M12HF
Q923	222780565JRC		NJM78M56FA
	Transistors		
Q403~Q406	2211945		2SK246-GR
Q407	2213510		DTA114ES
Q491,Q492	2213631 or		RN1241-A or
	2213632		RN1241-B
Q493	2213510		DTA114ES
Q501~Q504	2211732 or	*	2SC1845-F or
	2211733	*	2SC1845-E
Q505,Q506	2213354		2SA933S-R
Q507,Q508	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q509,Q510	2213284		2SC1740S-R
Q511,Q512	2211353 or		2SA940-O or
	2211354		2SA949-Y
Q513,Q514	2211633 or		2SC2229-O or
	2211634		2SC2229-Y
Q515,Q516	2213284		2SC1740S-R
Q517,Q518	2203010 or	*	2SC5171 or
	2202034	*	2SD1763A-D
Q519,Q520	2203000 or	*	2SA1930 or
	2202024	*	2SB1186A-D
Q521,Q522	2202823 or	*	2SC5200-O or
	2201483	*	2SC3281-O
Q523,Q524	2202813 or	*	2SA1943-O or
	2201473	*	2SA1302-O
Q525,Q526	2211633 or		2SC2229-O or
	2211634		2SC2229-Y
Q572	221282		DTC144ES
Q573	2211164		2SC2120-Y
Q575,Q576	2213631 or		RN1241-A or
	2213632		RN1241-B
Q581,Q582	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q583	2211792 or		2SA992-F or
	2211793		2SA992-E
Q591,Q592	2213640		DTC123JS
Q924	2211455		2SA1015-GR
	Diodes		
D401~D404	223163		1SS133
D505,D506	223163		1SS133
D571,D572	223163		1SS133
D591,D592	223163		1SS133
D911	22380038		RBV602
D915~D918	22380032		1SR139-100
D926~D928	22380032		1SR139-100
D929	224473304		MTZJ33D
D930,D931	223163		1SS133
	Relaies		
RL591,RL592	25065339		NRL-2P5A-DC24-046

CIRCUIT NO.	PART NO.	DESCRIPTION
	Coils	
L501,L502	231176S	S-1.3C
	Capacitors	
C303,C304	354741009	10μF,16V,Elect.
C307,C308	354721019	100μF,6.3V,Elect.
C309,C310	374726224	6200pF±5%,50V,Plastic
C311,C312	374721824	1800pF±5%,50V,Plastic
C313~C316	354741009	10μF,16V,Elect.
C391,C392	374721015	100pF±10%,50V,Plastic
C401,C402	354741009	10μF,16V,Elect.
C411,C412	354741009	10μF,16V,Elect.
C413~C416	374721044	0.1μF±5%,50V,Plastic
C417~C420	374721024	1000pF±5%,50V,Plastic
C421,C422	374721534	0.015μF±5%,50V,Plastic
C433,C434	374721534	0.015μF±5%,50V,Plastic
C435,C436	374721015	100pF±10%,50V,Plastic
C441	354721019	100μF,6.3V,Elect.
C442	354780109	1μF,50V,Elect.
C501,C502	354741009	10μF,16V,Elect.
C503,C504	374721015	100pF±10%,50V,Plastic
C507,C508	354724719	470μF,6.3V,Elect.
C513,C514	354722219	220μF,6.3V,Elect.
C521,C522	354772209	22μF,63V,Elect.
C529~C532	374721044	0.1μF±5%,50V,Plastic
C570	354791019	100μF,100V,Elect.
C571,C573	354741009	10μF,16V,Elect.
C572	353741009	10μF,16V,Elect.
C581	354721019	100μF,6.3V,Elect.
C915,C916	3504281	10000μF,71V,Elect. <D>
	3504280	8200μF,56V,Elect. <P/W>
C923	354761029	1000μF,35V,Elect.
C924	354763319	330μF,35V,Elect.
C927,C928	354741009	10μF,16V,Elect.
C931	354741009	10μF,16V,Elect.
C932,C933	354781019	100μF,50V,Elect.
C936,C937	354741009	10μF,16V,Elect.
C938	354781009	10μF,50V,Elect.
C983,C984	354741009	10μF,16V,Elect.
	Resistors	
R393	5104288	N11RLC250KWT20Z,Balance
R409,R415	5104356	N14RLC100KWT20Z,Tone
R527,R528	443524734	47 kOhm±5%,1/2W,Metal oxide
R533,R534	4500081	27 Ohm±5%,1/4W,Metal
R535,R536	4500095	100 Ohm±5%,1/4W,Metal
R537,R538	5210259	N06HR 2KBC, Trim
R543,R544	4500107	330 Ohm±5%,1/4W,Metal
R545,R546	4000132	RGC55 0.22 OHMK, Metal plate
R551,R552	453630824	8.2 Ohm±5%,1W,Metal
R553,R554	443523924	3.9 kOhm±5%,1/2W,Metal oxide
R570	443522204	22 Ohm±5%,1/2W,Metal oxide
R923	4500055	2.2 Ohm±5%,1/4W,Metal
R924	4500069	8.2 Ohm±5%,1/4W,Metal
R930	4500079	22 Ohm±5%,1/4W,Metal
R933	4500087	47 Ohm±5%,1/4W,Metal
	Terminals	
P301~P303	25045300	NPJ-6PDBL159
P501	25060224	NTM-8PDML146
	Sockets	
P711a~P713a	25051046	NSCT-10P833

CIRCUIT NO.	PART NO.	DESCRIPTION
	Plugs	
P211a,P613a	25055652	NPLG-14P608
	Wire holders	
JL261a	25051088	NSCT-4P875
JL912a	25051110	NSCT-4P895
JL913a	25051109	NSCT-5P896
	Radiators	
Q921a	27160209	RAD-67
D911a	27160227	RAD-076

POWER SUPPLY CIRCUIT PC BOARD(NAETC-5397-3/3A)

CIRCUIT NO.	PART NO.	DESCRIPTION
F921,F922	252156Y	⚠ 1A-UL/T-237, Secondary fuse <D>
	252070	⚠ 1A-SE-EAK, Secondary fuse <P/W>
F921a,F922a	25050065	⚠ YSH403T,Fuseholder
JL911b	25051100	NSCT-6P897,Wire holder
JL912b	25051110	NSCT-4P895,Wire holder <P/W>
JL913b	25051109	NSCT-5P896,Wire holder
A961	29360398	⚠ Fuse label <P/W>

SWITCH PC BOARD(NASW-5398-3)

120V model only

CIRCUIT NO.	PART NO.	DESCRIPTION
S911	25065437	⚠ NSS-22157P,Slide switch
JL911a	25051110	NSCT-6P897,Wire holder
JL912c	25051108	NSCT-4P895,Wire holder

DISPLAY CIRCUIT PC BOARD(NADIS-5399-3/3A/3B/3C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Remote sensor	
U701	24130010	HC-312
	IC	
Q701	22240892	μPD78044AGF-111
Q751	22240679	μPC1346CS <P>
	FL tube	
Q702	212142	FIP13PM8
	Transistors	
Q703	221282	DTC144ES
Q704~Q706	2213284	2SC1740S-R
Q707	2213510	DTA114ES
	Diodes	
D701,D702	223163	1SS133
D703	224470913	MTZJ9.1C
D704,D705	223163	1SS133
D706,D707	224470562	MTZJ5.6B
D708	223163	1SS133
D709	225291D	SEL4910D-D,LED
D710~D712	223163	1SS133
D751	223163	1SS133 <P>
	Coils	
L701~L703	233454K220	NCH-1452,220K
	Resonator	
X701	3010163	CST4.19MGW,Ceramic
X751	3010203Y	AF6146CG <P>
	Capacitors	
C701	3000075	0.047F, 5.5V, Super
C702	375524744	0.47μF±5%,50V,Plastic
C703	354721019	100μF,6.3V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C704	354780109	1μF,50V,Elect.
C706,C707	354780109	1μF,50V,Elect.
C709,C711	355721019	100μF,6.3V,Elect.
C751	354721019	100μF,6.3V,Elect. <P>
C754,C760	374724724	4700pF±5%,50V,Plastic <P>
C755,C756	374723324	3300pF±5%,50V,Plastic <P>
C757	354780229	2.2μF,50V,Elect. <P>
C758	374724734	0.047μF±5%,50V,Plastic <P>
C759	374722234	0.022μF±5%,50V,Plastic <P>
	Resistor	
R786	5210265	N06HR50KBC,Trim <P>
	Wire holder	
JL711a	25051089	NSCT-5P876
	Plugs	
P711b~P713b	25055695	NPLG-10P615
	Switches	
S701~S703	25035652	NPS-111-S604
S704~S706	25035652	NPS-111-S604 <P>
S707~S717	25035652	NPS-111-S604
S723~S737	25035652	NPS-111-S604
	Holder	
Q702a	27190937AY	FL

TUNER CIRCUIT PC BOARD(NARF-5400-3/3A/3B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end	
U001	240104Y	ENV172D2G1 <D>
	240103Y	ENV172A2G1 <P/W>
	ICs	
Q103	22240749Y	LA1851N
Q171	22240090	LM7001
	Transistors	
Q101	2210746	2SC945A-P <P/W>
Q102	2211723	2SC1923-O
Q104	2213284	2SC1740S-R <P/W>
Q131,Q173	2213284	2SC1740S-R
Q172	2212445	2SK365-GR
Q174,Q175	2213510	DTA114ES
Q201,Q202	2213284	2SC1740S-R
Q203,Q204	2212794	2SD1468-R
Q205	2213510	DTA114ES
	Diode	
D131,D132	223191	SD101
D171	224470512	MTZJ5.1B
	Coils and transformers	
L101	233480AY	NFIF-4090
L102	233481Y	NFIF-4091
L103	233454M022	NCH-1452
L104	233383	NMC-6070 <P/W>
L151	231226Y	NMRF-7069
L152	232166Y	NMIF-4089
L201,L202	233355A	NMC-4059 <P/W>
	Ceramic filters	
X101	3010071	SFE10.7MA5
X102	3010071	SFE10.7MA5 <P/W>
X103	3010071	SFE10.7MA5 <D>
	3010130	SFE10.7MZ2A <P/W>
X151	3010123	SFZ-450JL

CIRCUIT NO.	PART NO.	DESCRIPTION
	Resonators	
X171	3010158 or	XTL7.2M or
	3010141	XTL7.2M,Crystal
X201	3010227Y	CSB456F15,Ceramic
	Capacitors	
C001	354741019	100 μ F,16V,Elect.
C107-C109	354780229	2.2 μ F,50V,Elect.
C110	354741019	100 μ F,16V,Elect.
C132	354742209	22 μ F,16V,Elect.
C133	354784799	0.47 μ F,50V,Elect.
C151	354741009	10 μ F,16V,Elect.
C155,C156	354741009	10 μ F,16V,Elect.
C157	374723324	3300pF±5%,50V,Plastic
C158	374721534	0.015 μ F±5%,50V,Plastic <D>
	374721034	0.01 μ F±5%,50V,Plastic <P/W>
C159	354721019	100 μ F,6.3V,Elect.
C171	354741019	100 μ F,16V,Elect.
C174	374723334	0.033 μ F±5%,50V,Plastic
C175	354780229	2.2 μ F,50V,Elect.
C176	374722234	0.022 μ F±5%,50V,Plastic
C177	354782299	0.22 μ F,50V,Elect.
C180	354721019	100 μ F,6.3V,Elect.
C201,C202	354780109	1 μ F,50V,Elect.
C203	354783399	0.33 μ F,50V,Elect.
C204	354741019	100 μ F,16V,Elect.
C205,C206	374721534	0.015 μ F±5%,50V,Plastic <D>
	374721034	0.01 μ F±5%,50V,Plastic <P>
	374721234	0.012 μ F±5%,50V,Plastic <W>
C207-C210	354741009	10 μ F,16V,Elect.
C213-C216	354741009	10 μ F,16V,Elect. <P/W>
C217	354780229	2.2 μ F,50V,Elect.
	Resistors	
R101	5210263	N06HR 20KBC, Trim
R202	5210261	N06HR 5KBC, Trim
	Terminals	
P101	25060160	NTM-4PDML086 <D>
	25060117	NTM-2PDML051 <P/W>
	Socket	
P211b	25050986	NSCT-14P773
	Shield plate	
	27150346	<P/W>

POWER SUPPLY CIRCUIT PC BOARD(NAPS-5401-3/3A/3B/3C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q951	221282	DTC144ES
Q952	2213650	DTD113ZS
	Diodes	
D951-D954	22380032	1SR139-100
D955	223163	1SS133
	Resistors	
R901	431523355	⚠ 3.3 MOhm±20%,1/2W,Solid <D>
R951	453530824	8.2 Ohm±5%,1/2W,Metal
	Fuses	
F901	252164Y	⚠ 5A-UL/T-237, Primary <D/W>
F902	252076	⚠ 3.15A-SE-EAK, Primary <P/W>
F903	252075	⚠ 2.5A-SE-EAK, Primary <P>

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C901	3500191Y	⚠ DE7150FZ103PAC400V/125V
C952	354742219	220 μ F,16V,Elect.
	Fuseholders	
F901a	25050065	⚠ YSH403T <D/W>
F902a	25050065	⚠ YSH403T <P/W>
F903a	25050065	⚠ YSH403T <P>
	Socket	
JL961a	25051087	NSCT-3P874
	AC outlet	
P902	25051126	⚠ NSCT-4P913 <D>
P903	25050410	⚠ NSCT-2P235 <P/W>
	Plug	
P901a	25055675	NPLG-2P631 <D/P>
	Relay	
RL901	25065483	⚠ NRL-1P5A-DC12-084
	Power transformer	
T902	2300670A	⚠ NPT-1111D <D>
	2300671AY	⚠ NPT-1111P <P>
	2300672AY	⚠ NPT-1111DG <W>
	Switch	
S901	25065437	⚠ NSS-22157P, Voltage selector <W>

VIDEO CIRCUIT PC BOARD(NAETC-5402-3)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q251,Q252	2212115 or	2SC2458-GR or
	2213284	2SC1740S-R
	IC	
Q253	222840661	4066B
	Diode	
D251	223163	1SS133
	Capacitors	
C251,C252	354721019	100 μ F,6.3V,Elect.
C255,C256	354724719	470 μ F,6.3V,Elect.
C257	354721019	100 μ F,6.3V,Elect.
C259	354741019	100 μ F,16V,Elect.
	Wire trap	
JL261b	25055625	NPLG-4P587
	Terminal	
P251	25045339	NPJ-4PDYE190

RI TERMINAL PC BOARD(NAETC-5404-3/3A)

CIRCUIT NO.	PART NO.	DESCRIPTION
P961	25045330	NPJ-2PDBL184,Terminal RI
JL711b	25055626	NPLG-5P588,Wire trap
JL961b	25051087	NSCT-3P874,Wire holder
S961	25065286	NSS-22112,Band switch <W>

HEADPHONE TERMINAL PC BOARD(NAETC-5405-3/3A)

CIRCUIT NO.	PART NO.	DESCRIPTION
P503	25045255	YKB21-5009,Headphone terminal

VOLUME PC BOARD(NAETC-5407-3)

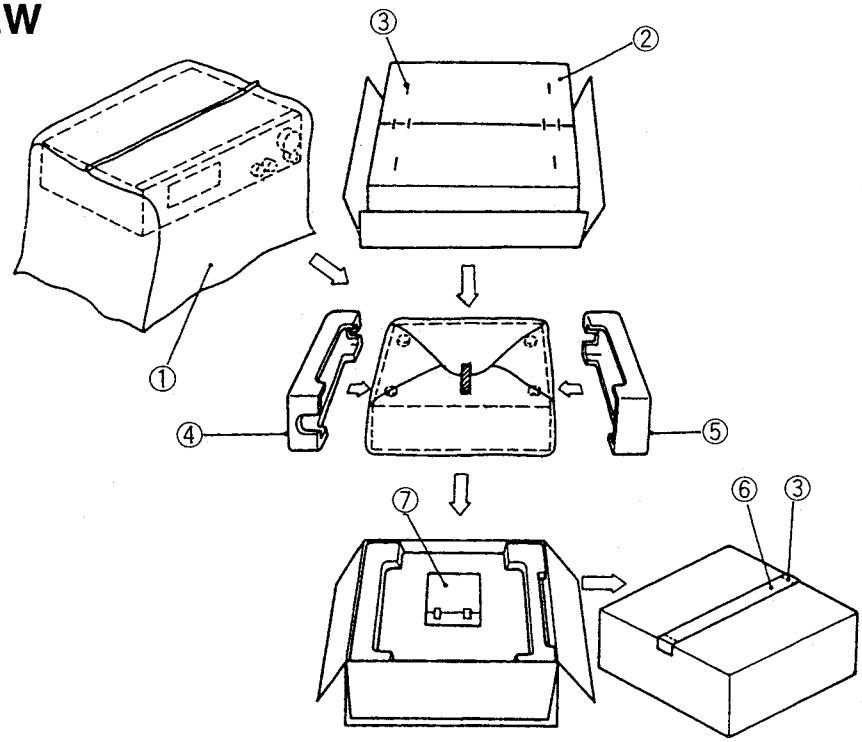
CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistor	
R441	5104334Y	N16RGL100KBT25F
	Socket	
P611b	25051127	NSCT-8P914

NOTE: <D>:120V model only
<P>:230V model only
<W>:Worldwide model only

CAUTION: **Replacement for transistor of mark *, if necessary, must be made from the same beta group (HFE) as the original type.**

NOTE:THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PACKING VIEW



PARTS LIST

TX-SV424

REF. NO.	PART NO.	DESCRIPTION
1	29100034-1Y	850×650, Styren bag
2	29052872AY	Carton box
3	282301	Staple
4	29091651BY	Pad L
5	29091652CY	Pad R
6	29110071	PP tape
7	Accessary bag ass'y	
	29100097-1Y	350×250, Styren bag
	25055018	CV-K-1, Conversion plug <W>
	292111	FM antenna <D>
	292112	FM antenna <P/W>
	29342151Y	Instruction manual U3 <W/C>
	29342149Y	Instruction manual U6 <P>
	29342148Y	Instruction manual, English
	29361877Y	Label UPC <N>
	29360778Y	Label, flash <D>
	232140	NMA-3057, AM loop antenna
	24140295Y	RC-295S, Remote control transmitter
	2010200	Remote control cable
	29358002K	Service station list <N>
	29095745	Sheet U7 <P>
	3010054	UM-3, Two batteries
	29365019B	Warranty card <N>
	25065462	YAE21-0237, FM antenna adaptor <W/A>

NOTE: <D>:120V model only
<P>:230V model only
<W>:Worldwide model only
<N>:USA model only
<A>:Australian model only
<C>:Canadian model only

TX-8410/TX-8410R

REF. NO.	PART NO.	DESCRIPTION
1	29100034-1Y	850×650, Styren bag
2	29052873AY	Carton box <TX-8410>
	29052874AY	Carton box <TX-8410R>
3	282301	Staple
4	29091651BY	Pad L
5	29091652CY	Pad R
6	29110071	PP tape
7	Accessary bag ass'y	
	29100097-1Y	350×250, Styren bag
	25055018	CV-K-1, Conversion plug <W>
	292111	FM antenna <D>
	292112	FM antenna <P/W>
	29342161Y	Instruction manual, English
	29342162Y	Instruction manual U6 <P>
	29342163Y	Instruction manual U3 <W/C>
	29361878Y	Label UPC <N>
	29360778Y	Label, flash <D>
	232140	NMA-3057, AM loop antenna
	24140294Y	RC-294S, Remote control transmitter
	2010200	Remote control cable
	29358002K	Service station list <N>
	29095745	Sheet U7 <P>
	3010054	UM-3, Two batteries
	29365019B	Warranty card <N>
	25065462	YAE21-0237, FM antenna adaptor <W/A>

NOTE: <D>:120V model only
<P>:230V model only
<W>:Worldwide model only
<N>:USA model only
<A>:Australian model only
<C>:Canadian model only

SPECIFICATIONS
TX-8410/TX-8410R

AMPLIFIER SECTION

Power Output
- U.S.A. & Canadian models: 100 watts per channel, min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.2% T.H.D.
- Other area models: Continuous output
  2 × 100 watts at 4 ohms, 1 kHz (DIN)
  2 × 65 watts at 8 ohms, 1 kHz (DIN)

Total Harmonic Distortion: 0.08% at power 30 watts, 8 ohms
IM Distortion: 0.08% at power 30 watts, 8 ohms
Damping Factor: 60 at 8 ohms
Sensitivity and Impedance
- Phono: 2.5 mV/50 kohms
- CD/Tape Play: 150 mV/50 kohms
- Tape Rec: 150 mV/2.2 kohms

Phono Overload: 120 mV RMS at 1 kHz, 0.5% T.H.D.
Frequency Response: 20 Hz to 30 kHz, ±1 dB
RIAA Deviation: 20 Hz to 20 kHz, ±0.8 dB
Tone Control
- Bass: ±10 dB at 100 Hz
- Treble: ±10 dB at 10 kHz

Signal-to-Noise Ratio
- Phono: 80 dB (IHF A, 5 mV input)
- CD/Tape: 100 dB (IHF A)

VIDEO SECTION

Signal sensitivity and impedance: 1 Vp-p, 75 ohms (VDP/VCR input, output)

TUNER SECTION

FM

Tuning Range: 87.5 — 108.0 MHz
Usable Sensitivity
- Mono: 11.2 dBf, 1.0 µV (75 ohms)
- Stereo: 17.2 dBf, 2.0 µV (75 ohms)

50dB Quieting Sensitivity
- Mono: 18.2 dBf, 2.2 µV (75 ohms)
- Stereo: 38.2 dBf, 22 µV (75 ohms)

Capture Ratio: 1.5 dB
Image Rejection Ratio
- U.S.A. & Canadian models: 40 dB
- Other area models: 85 dB

IF Rejection Ratio: 90 dB
Signal-to-Noise Ratio
- Mono: 73 dB
- Stereo: 67 dB

Alternate Channel Attenuation: 55 dB
Selectivity: 50 dB (DIN)
AM Suppression Ratio: 50 dB
Total Harmonic Distortion
- Mono: 0.15%
- Stereo: 0.25%

Frequency Response: 30 Hz — 15 kHz, ±1.5 dB
Stereo Separation: 45 dB at 1 kHz
30 dB at 100 Hz — 10 kHz

AM

Tuning Range
- U.S.A. & Canadian models: 530—1,710 kHz (10 kHz steps)
- European & Australian models: 522—1,611 kHz (9 kHz steps)
- Worldwide models: 531—1,602 kHz (9 kHz steps)
  530—1,710 kHz (10 kHz steps)

Usable Sensitivity: 30 µV
Image Rejection Ratio: 40 dB
IF Rejection Ratio: 40 dB
Signal-to-Noise Ratio: 40 dB
Total Harmonic Distortion: 0.7%

GENERAL

Power Supply
- U.S.A. & Canadian models: AC 120 V, 60 Hz
- European & Australian models: AC 230 V, 50 Hz
- Worldwide models: AC 220 V and 120 V switchable, 50/60 Hz

Power Consumption
- U.S.A. & Canadian models: 2.8 A (300 W)
- Other area models: 220 W

Dimensions (W × H × D): 455 × 150 × 322 mm
17-15/16″ × 5-7/8″ × 12-11/16″
Weight: 9.3 kg , 20.5 lbs.

REMOTE CONTROL RC-294S

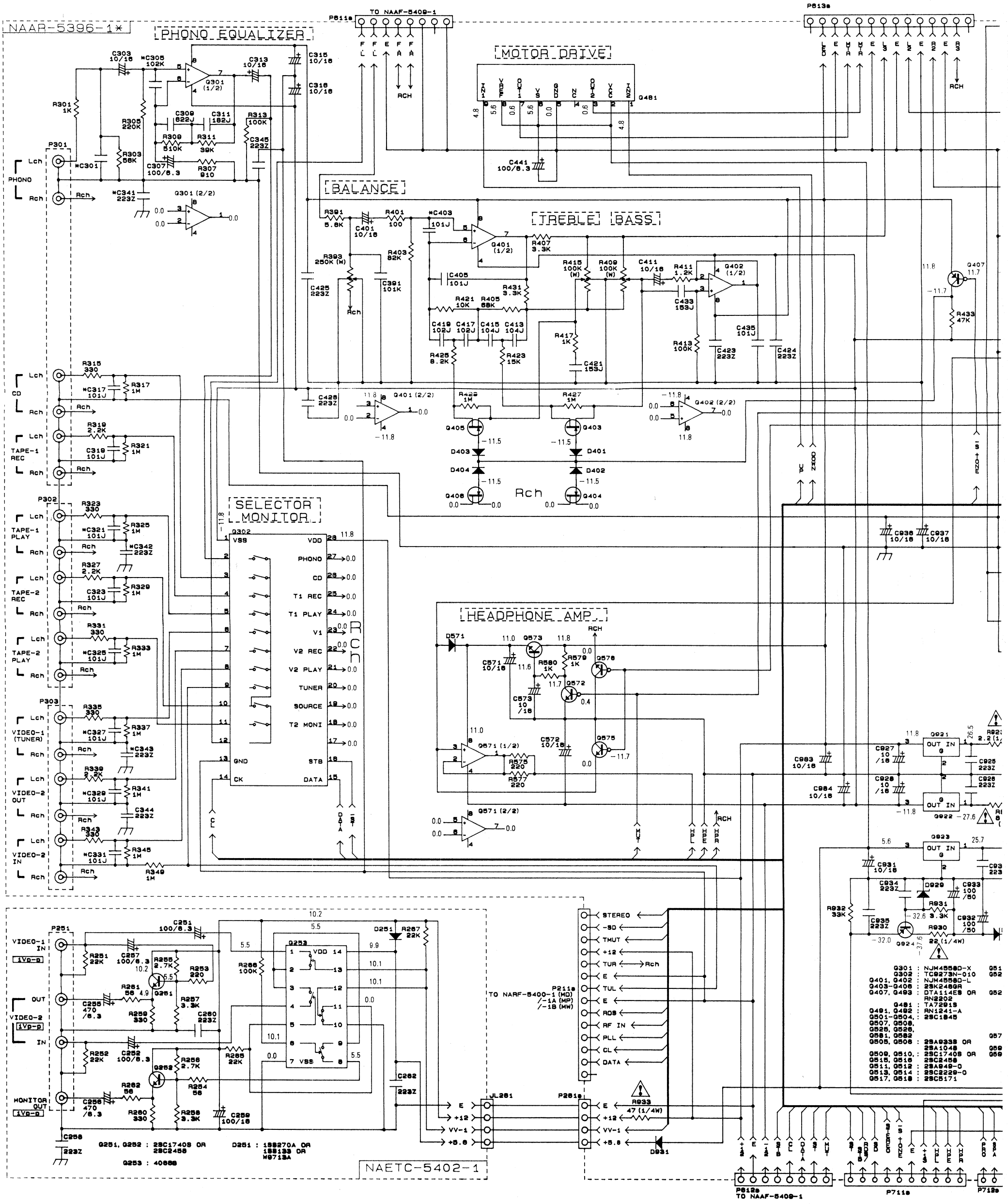
Transmitter: Infrared
Signal range: Approx. 5 meters, 16 ft.
Power supply: Two "AA" batteries (1.5 V × 2)
Dimensions (W × H × D): 55 × 18 × 194 mm
2-3/16″ × 11/16″ × 7-5/8″
Weight: 100 grams, 3.5 oz. (including batteries)

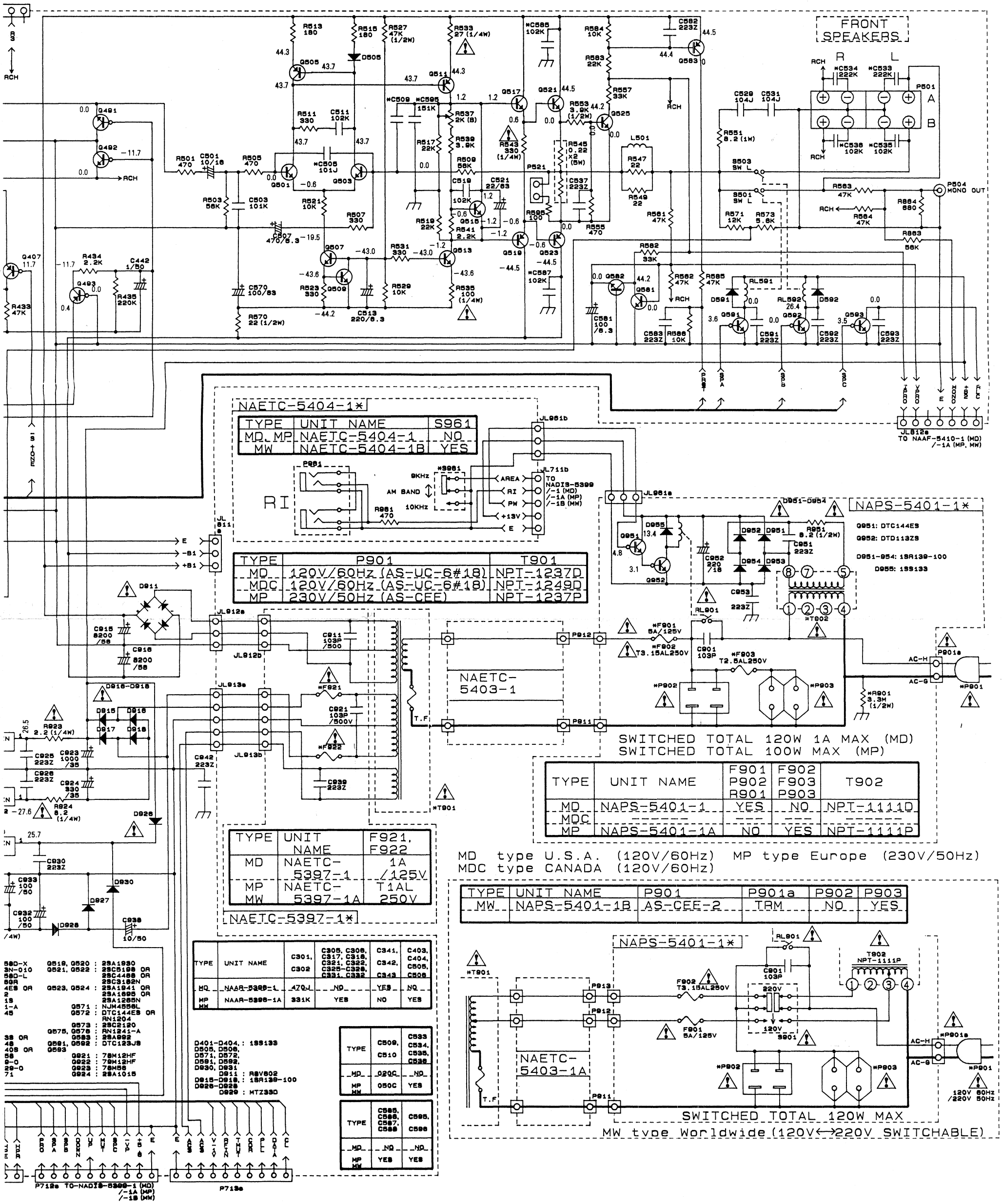
Specifications and features are subject to change without notice.

ONKYO CORPORATION
International Sales Dept. : 31 Sankyo-bild. 3-8-5, Asakusabashi, Taito-ku, TOKYO 111, JAPAN
TEL : 03-5820-5865 FAX : 03-5820-5869
ONKYO U.S.A. CORPORATION
200 Williams Drive, Ramsey, N.J. 07446, U.S.A.
TEL : 201-825-7950 FAX : 201-825-8150
ONKYO EUROPE ELECTRONICS GMBH
Industriestrasse 18-20, 82110 Germering, GERMANY
TEL : 089 84 93 20 FAX : 089 84 93 226
ONKYO FRANCE
Immeuble Le Diamant, Domaine Technologique de Saclay, 4 Rue Rene Razel, 91892 SACLAY, FRANCE
TEL : (1) 69 33 14 00 FAX : (1) 69 41 35 84

N509 PN 0M3519 Printed in Japan

SCHEMATIC DIAGRAM





TYPE	UNIT NAME	S961
MD, MP	NAETC-5404-1	NO
MW	NAETC-5404-1B	YES

TYPE	P901	T901
MD	120V/60Hz (AS-UC-6#18)	NPT-1237D
MDC	120V/60Hz (AS-UC-6#18)	NPT-1249D
MP	230V/50Hz (AS-CEE)	NPT-1237P

TYPE	UNIT NAME	F901 P902 R901	F902 F903	T902
MD	NAPS-5401-1	YES	NO	NPT-1111D
MDC	------	---	---	------
MP	NAPS-5401-1A	NO	YES	NPT-1111P

TYPE	UNIT NAME	F921, F922
MD	NAETC-5397-1	1A /125V
MP MW	NAETC-5397-1A	T1AL 250V

TYPE	UNIT NAME	C301, C302	C305, C306, C317, C318, C321, C322, C325-C328, C331, C332	C341, C342, C343	C403, C404, C505, C506
MD	NAAR-5396-1	470J	NO	YES	NO
MP MW	NAAR-5396-1A	331K	YES	NO	YES

TYPE	C509, C510	C533 C534, C535, C536
MD	020C	NO
MP MW	050C	YES

TYPE	C585, C586, C587, C588	C595, C596
MD	NO	NO
MP MW	YES	YES

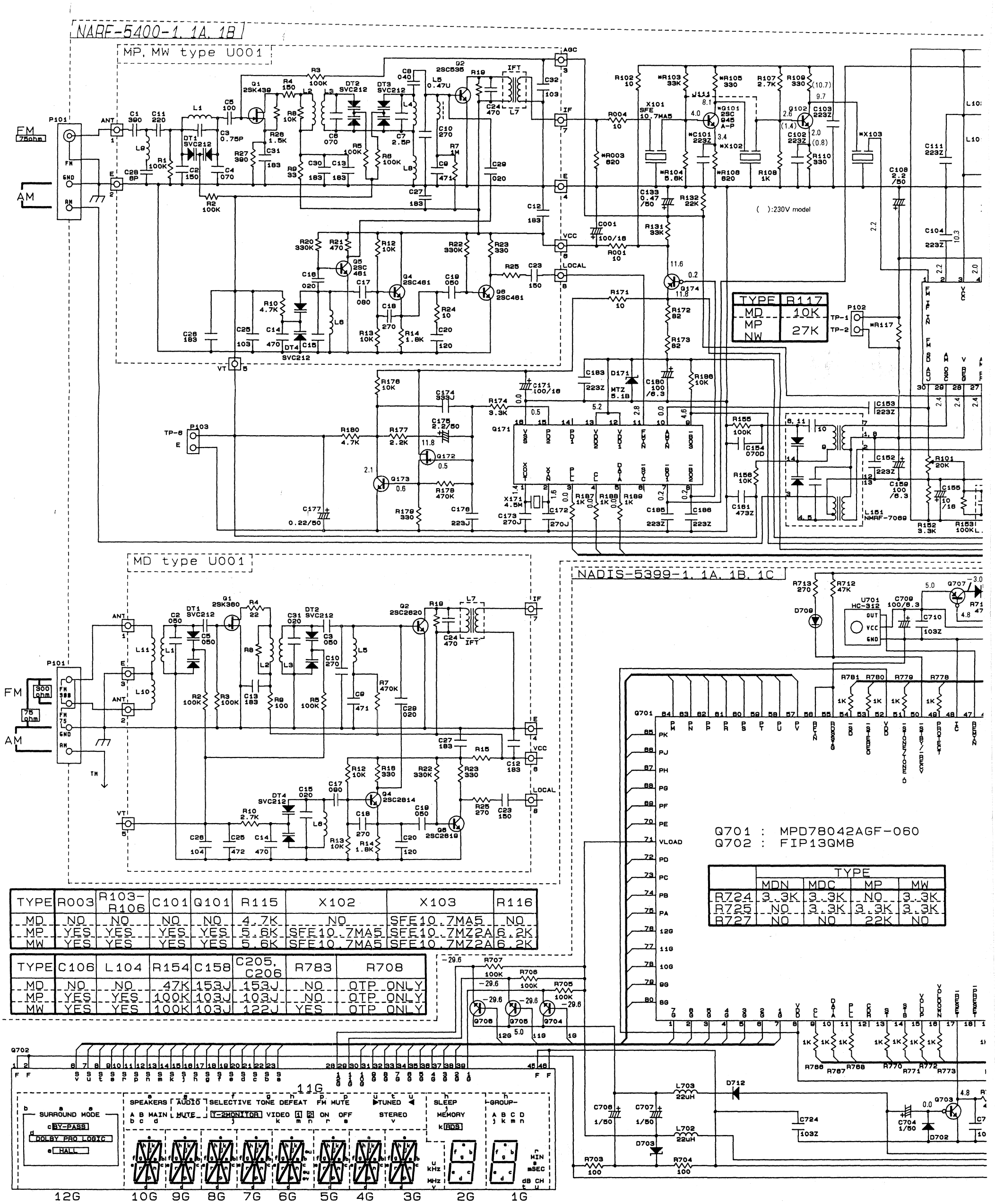
TYPE	UNIT NAME	P901	P901a	P902	P903
MW	NAPS-5401-1B	AS-CEE-2	TRM	NO	YES

D401-D404, D505, D506, D571, D572, D591, D592, D930, D931 : 1SS133
D911 : RBV602
D915-D918, D926-D928 : 1SR139-100
D929 : MTZ33D

Q519, Q520 : 2SA1930
Q521, Q522 : 2SC5198 OR 2SC4468 OR 2SC3182N
Q523, Q524 : 2SA1941 OR 2SA1695 OR 2SA1285N
Q571 : NJM4558L
Q572 : DTC144ES OR RN1204
Q573 : 2SC2120
Q575, Q576 : RN1241-A
Q583 : 2SA992
Q591, Q592 : DTC123JS
Q593
Q921 : 78M12HF
Q922 : 79M12HF
Q923 : 78M05
Q924 : 2SA1015

50D-X
3N-010
50D-L
50R
4ES OR
2
1S
1-A
4S
3S OR
4S
40S OR
5S
9-0
29-0
71

SCHEMATIC DIAGRAM



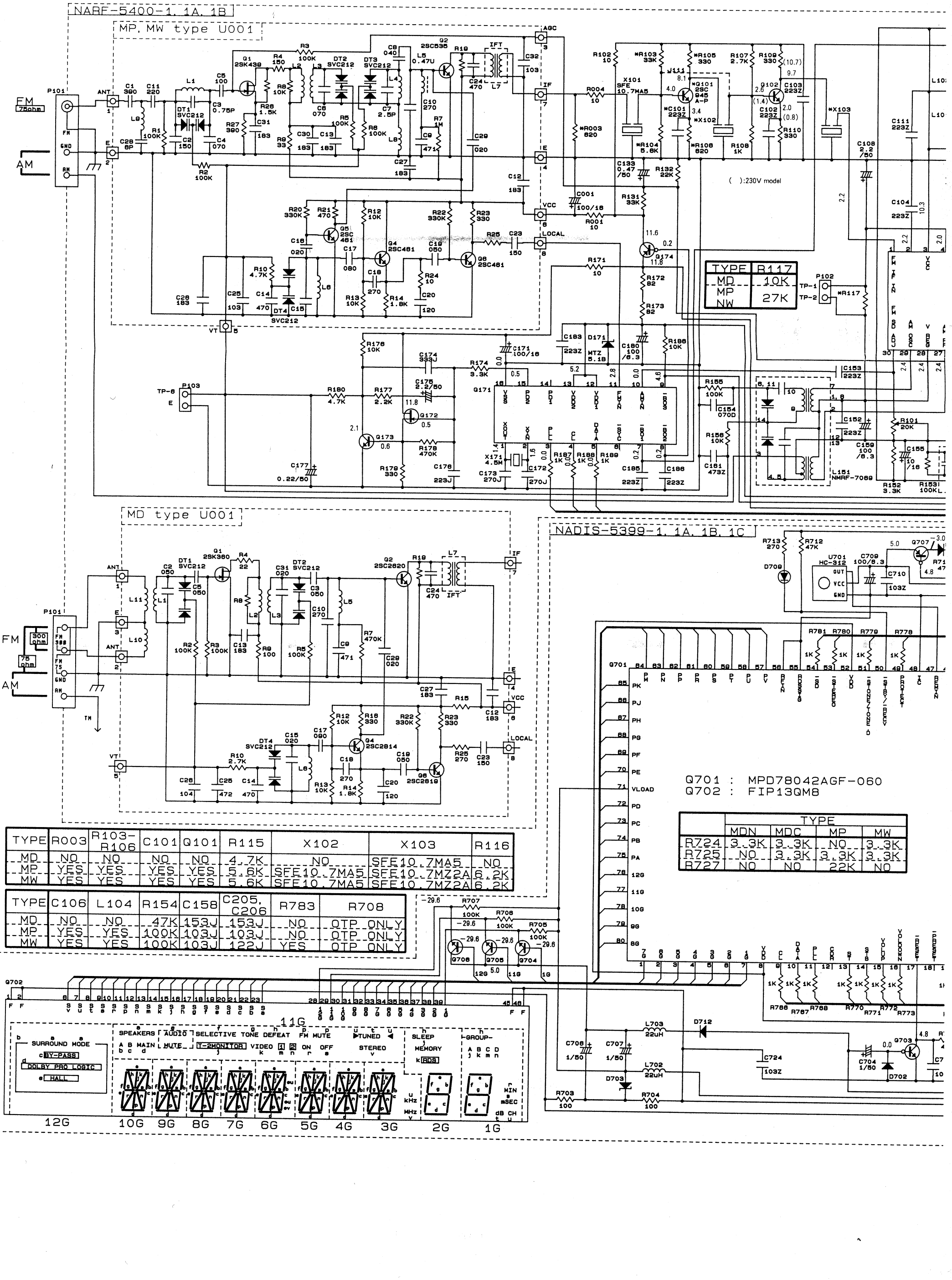
TYPE	R117
MD	10K
MP	27K
NW	

TYPE	R003	R103-R106	C101	Q101	R115	X102	X103	R116
MD	NO	NO	NO	NO	4.7K	NO	SFE10.7MA5	NO
MP	YES	YES	YES	YES	5.6K	SFE10.7MA5	SFE10.7MZ2A	6.2K
MW	YES	YES	YES	YES	5.6K	SFE10.7MA5	SFE10.7MZ2A	6.2K

TYPE	C106	L104	R154	C158	C205, C206	R783	R708
MD	NO	NO	47K	153J	153J	NO	OTP ONLY
MP	YES	YES	100K	103J	103J	NO	OTP ONLY
MW	YES	YES	100K	103J	122J	YES	OTP ONLY

	TYPE			
	MDN	MDC	MP	MW
R724	3.3K	3.3K	NO	3.3K
R725	NO	3.3K	3.3K	3.3K
R727	NO	NO	22K	NO

SCHEMATIC DIAGRAM



TYPE	R003	R103-R106	C101	Q101	R115	X102	X103	R116
MD	NO	NO	NO	NO	4.7K	NO	SFE10.7MA5	NO
MP	YES	YES	YES	YES	5.6K	SFE10.7MA5	SFE10.7MZ2A	6.2K
MW	YES	YES	YES	YES	5.6K	SFE10.7MA5	SFE10.7MZ2A	6.2K

TYPE	C106	L104	R154	C158	C205, C206	R783	R708
MD	NO	NO	47K	153J	153J	NO	OTP ONLY
MP	YES	YES	100K	103J	103J	NO	OTP ONLY
MW	YES	YES	100K	103J	122J	YES	OTP ONLY

	TYPE			
	MDN	MDC	MP	MW
R724	3.3K	3.3K	NO	3.3K
R725	NO	3.3K	3.3K	3.3K
R727	NO	NO	22K	NO

5 6 7 8

MP, MW type

MD type

Q101 : 2SC945A-P
Q102 : 2SC1923-O
Q103 : LA1851N
Q173, Q201, : 2SC1740S
Q202
Q171 : LM7001
Q172 : 2SK365GR
Q174, Q175 : DTA114ES
Q205
Q203, Q204 : 2SD1468-R

D171 : MTZJ5.1B

Q703 : DTC144ES
Q704-Q706 : 2SC1740S
Q707 : DTA114ES

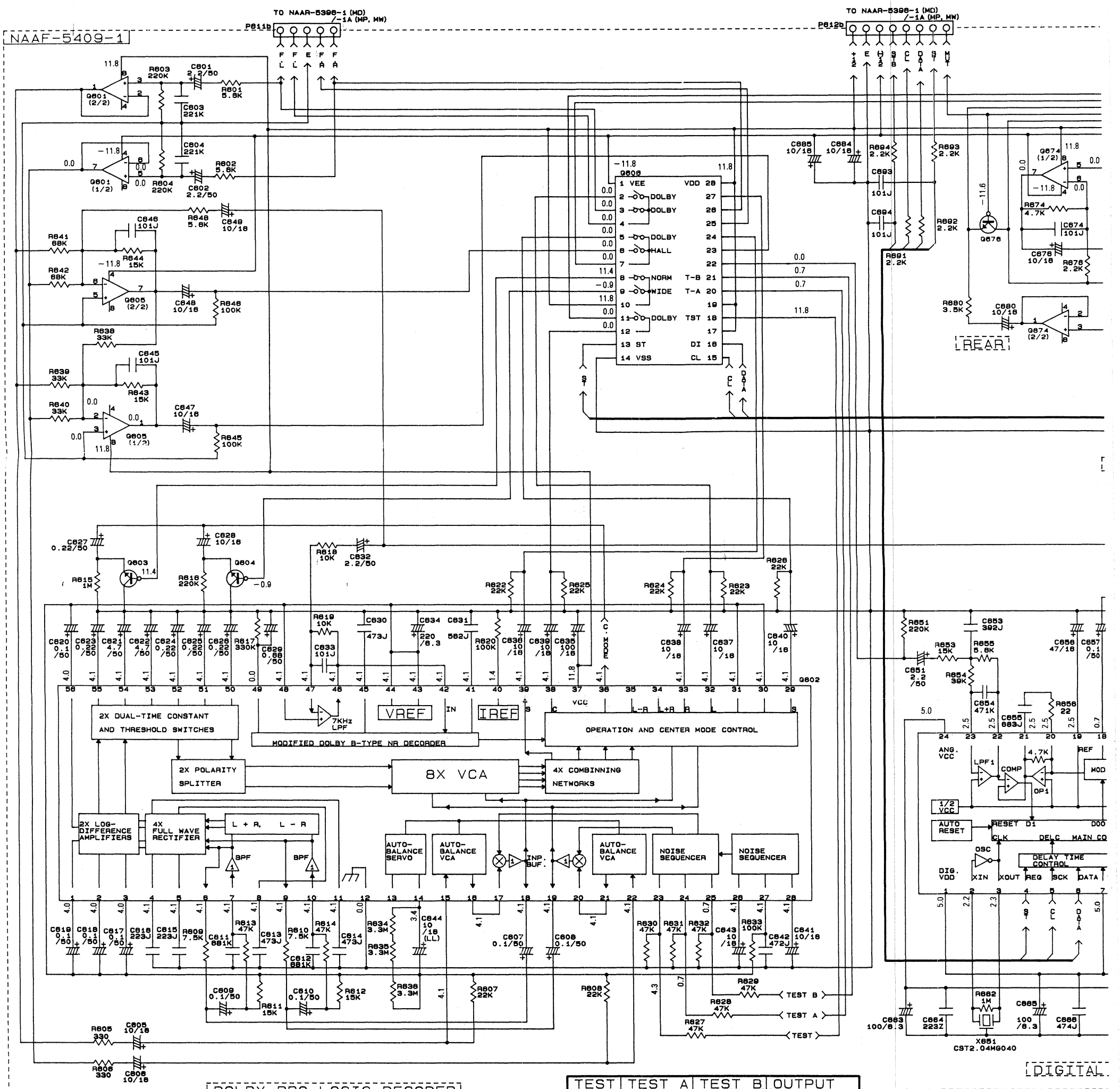
D701, D702, : 1SS133
D704, D705,
D708, D710,
D711, D712
D703 : MTZJ9.1C
D706, D707 : MTZJ5.6B
D709 : SEL4910D-D

NAETC-5405-1

	TYPE	
	MDN MDC	MP MW
C575	NO	YES
C576	NO	YES

P211b TO NAAR-5396-1*
JL711a TO NAETC-5404-1*
P711b TONAAR-5396-1*
P712b TO NAAR-5396-1*
P713b TO NAAR-5396-1*

SCHEMATIC DIAGRAM



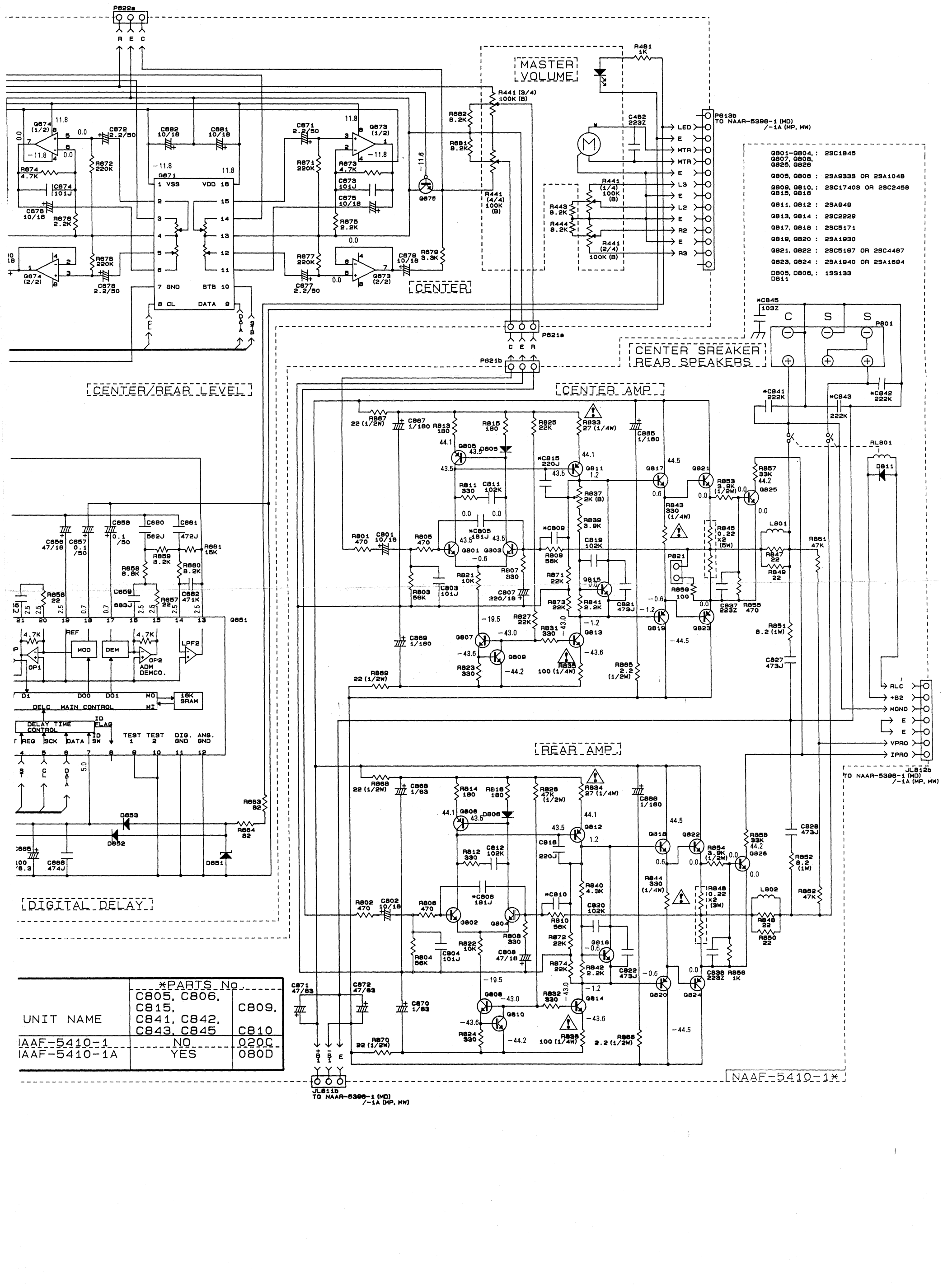
DOLBY PRO LOGIC DECODER

Q601, Q605, Q673, Q674 :	NJM4558L-D OR BA15218N	Q651 :	M65830P OR NJU9701D
Q602 :	M69032P OR NJM2177L	Q671 :	TC9213P
Q603, Q604 :	RN1241-A		
Q606 :	TC9162N OR NJU7311L	D651 :	MTZJ5.6B
		D652, D653 :	1SS133

TEST	TEST A	TEST B	OUTPUT
H	X	X	TEST OFF
L	L	L	NOISE-L
L	L	H	NOISE-C
L	H	L	NOISE-R
L	H	H	NOISE-S

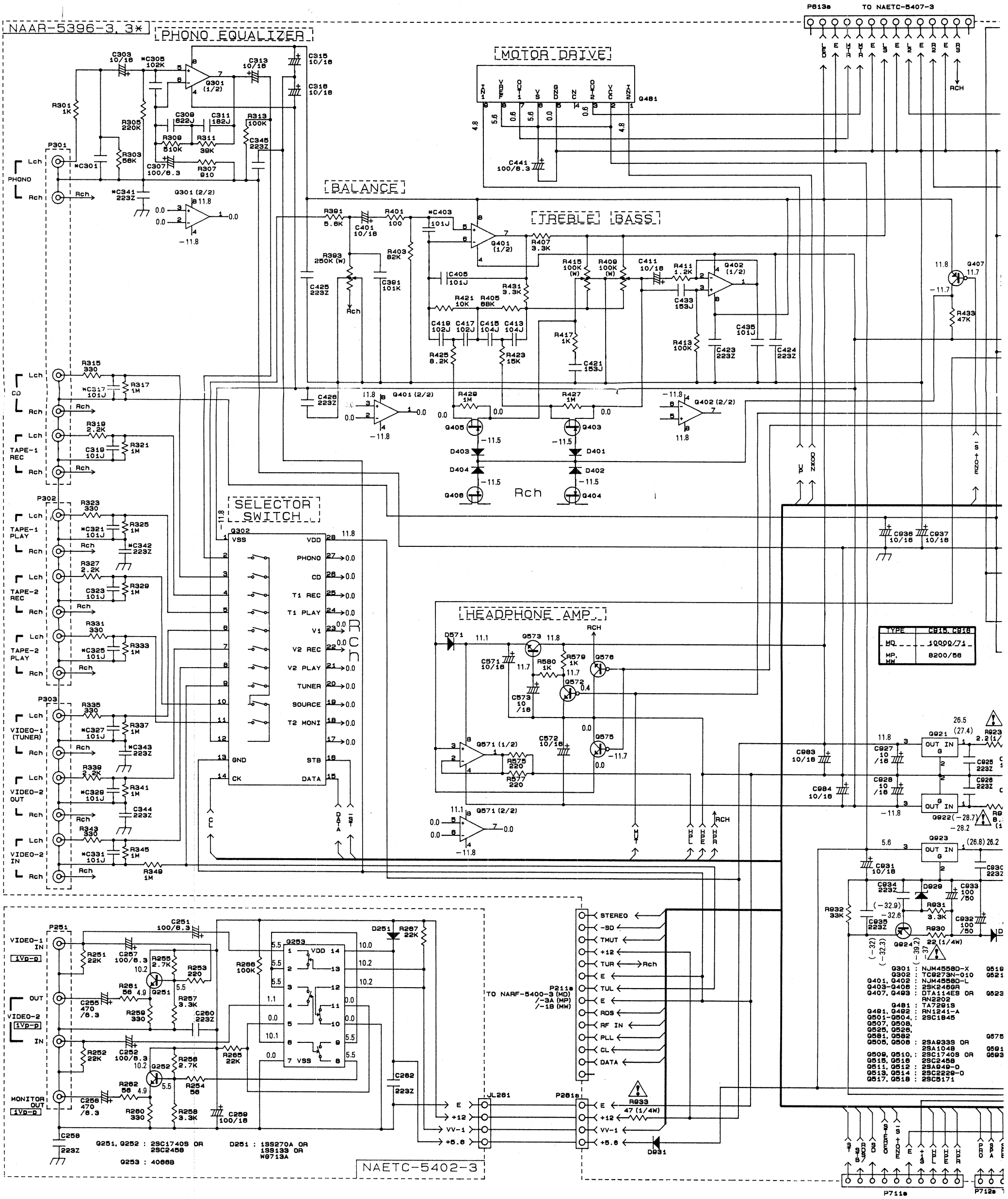
X: Don't care

TYPE	UNIT NAM
MD	NAAF-5410-
MP	NAAF-5410-
MW	



UNIT NAME	*PARTS No. C805, C806, C815, C841, C842, C843, C845	C809, C810
NAAF-5410-1	NO	020C
NAAF-5410-1A	YES	080D

SCHEMATIC DIAGRAM



5 6 7 8

TYPE	R507, R508
MD	270
MP MW	390

:D model
( ):P/W models

FRONT SPEAKERS

NAETC-5404-3, 3A

TYPE	UNIT NAME	S961
MD, MP	NAETC-5404-1	NO
MW	NAETC-5404-1A	YES

TYPE	JL914	JL912
MD	YES	a TO c
MP, MW	NO	a TO b

TYPE	P901	T901
MD	120V/60Hz (AS-UC-6#18)	NPT-1243D
MP	230V/50Hz (AS-CEE)	NPT-1243P
MW	230V, 120V (AS-CEE-2)	NPT-1237DG

SWITCHED TOTAL 120W 1A MAX (MD)
SWITCHED TOTAL 100W MAX (MP)

TYPE	UNIT NAME	F901 P902 R901	F902 F903	T902
MD	NAPS-5401-3	YES	NO	NPT-1111D
MDC	------	---	---	------
MP	NAPS-5401-3A	NO	YES	NPT-1111P

MD type U.S.A. (120V/60Hz) MP type Europe (230V/50Hz)
MDC type CANADA (120V/60Hz)

TYPE	UNIT NAME	P901	P901a	P902	P903
MW	NAPS-5401-3B	AS-CEE-2	TRM	NO	YES

NAPS-5401-3, 3A

Q951: DTC144ES
Q952: DTD113ZS
D951-954: 1SR139-100
D955: 1SS133

NAETC-5397-3, 3*

TYPE	UNIT NAME	F921, F922
MD	NAETC-5397-3	1A /125V
MP MW	NAETC-5397-3A	T1AL 250V

TYPE	UNIT NAME	C301, C302	C305, C306, C317, C318, C321, C322, C325-C328, C331, C332	C341, C342, C343	C403, C404, C505, C506
MD	NAAR-5396-3	470J	NO	YES	NO
MP MW	NAAR-5396-3A	331K	YES	NO	YES

TYPE	C509, C510	C533 C534, C535, C536
MD	020C	NO
MP MW	050C	YES

TYPE	C585, C586, C587, C588	C595, C596
MD	NO	NO
MP MW	YES	YES

D401-D404, : 1SS133
D505, D506,
D571, D572,
D591, D592,
D930, D931
D911 : RBV602
D915-D918, : 1SR139-100
D926-D928
D929 : MTZ33D

P712a TO-NADIS-5399-3 (MD)
/-3A (MP)
/-3B (MW)

P713a

JL712a TO NAAF-5410-3 (MD)
/-3A (MP, MW)

SCHEMATIC DIAGRAM

NARF-5400-3, 3A, 3B, 3C

MP, MW type U001

MD type U001

NADIS-5399-3, 3A, 3B, 3C

TYPE	R004	R177
MD	10	10K
MP MW	220	27K

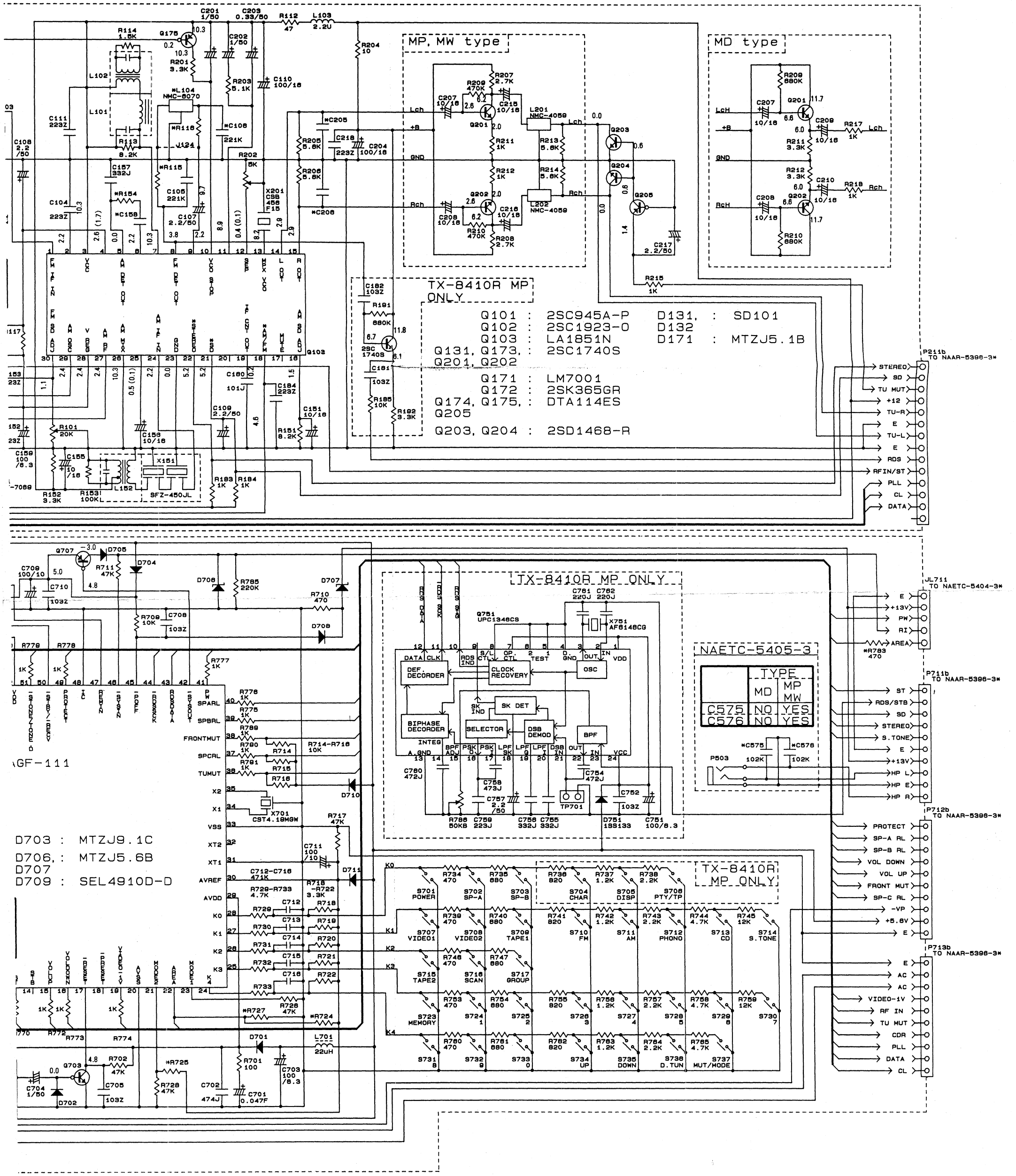
TYPE	R003	R103–R106	C101	Q101	R115	X102	X103	R116
MD	NO	NO	NO	NO	4.7K	NO	SFE10.7MA5	NO
MP	YES	YES	YES	YES	5.6K	SFE10.7MA5	SFE10.7MZ2A	6.2K
MW	YES	YES	YES	YES	5.6K	SFE10.7MA5	SFE10.7MZ2A	6.2K

TYPE	C106	L104	R154	C158	C205, C206	R783	R708
MD	NO	NO	47K	153J	153J	NO	OTP ONLY
MP	YES	YES	100K	103J	103J	NO	OTP ONLY
MW	YES	YES	100K	103J	122J	YES	OTP ONLY

Q701 : MPD78044AGF-111
Q702 : FIP13PM8
Q703 : DTC144ES
Q704–Q706 : 2SC1740S
Q707 : DTA114ES

D701, D702, : 1SS133
D704, D705,
D708, D710,
D711, D712
D703 : MTZ
D706, : MTZ
D707
D709 : SEL

	TYPE		
	MD	MP	MW
R724	3.3K	NO	3.3K
R725	NO	3.3K	NO
R727	NO	22K	NO


MP, MW type
MD type
TX-8410R MP ONLY
Q101 : 2SC945A-P
Q102 : 2SC1923-0
Q103 : LA1851N
Q131, Q173, Q201, Q202 : 2SC1740S
Q171 : LM7001
Q172 : 2SK365GR
Q174, Q175, Q205 : DTA114ES
Q203, Q204 : 2SD1468-R
D131, : SD101
D132
D171 : MTZJ5.1B
P211b TO NAAR-5396-3*
STEREO
SD
TU MUT
+12
TU-R
E
TU-L
E
RDS
RFIN/ST
PLL
CL
DATA
TX-8410R MP ONLY
NAETC-5405-3
TYPE
MD
MP MW
C575 NO YES
C576 NO YES
JL711 TO NAETC-5404-3*
E
+13V
PW
RI
AREA
P711b TO NAAR-5396-3*
ST
RDS/STB
SD
STEREO
S.TONE
E
+13V
HP L
HP E
HP R
P712b TO NAAR-5396-3*
PROTECT
SP-A RL
SP-B RL
VOL DOWN
VOL UP
FRONT MUT
SP-C RL
-VP
+5.6V
E
P713b TO NAAR-5396-3*
E
AC
AC
VIDEO-1V
RF IN
TU MUT
CDR
PLL
DATA
CL
D703 : MTZJ9.1C
D706, : MTZJ5.6B
D707
D709 : SEL4910D-D